Welcome to Sierra College

Sierra College is accredited by the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, 10 Commercial Boulevard, Suite 204, Novato, CA 94949 (415) 506-0234, an institutional accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation and the U.S. Department of Education.

Rocklin Campus
5000 Rocklin Road
Rocklin, California 95677
(916) 624-3333

Nevada County Campus
250 Sierra College Drive
Grass Valley, California 95945
(530) 274-5300

Truckee Center
10725 Pioneer Trail, Building A
Truckee, California 96161
(530) 550-2225

Roseville Gateway Center
333 Sunrise Avenue
Roseville, California 95661
(916) 781-6200

Web Site
http://www.sierracollege.edu

Catalog Acknowledgments
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Tracy Shields, Editor and Coordinator

A SIERRA COLLEGE PUBLICATION
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Additional copies of this catalog may be purchased from Sierra College Bookstores. Please call (916) 781-0500 for further information.
MISSION STATEMENT

Sierra College provides a supportive learning environment to students with diverse goals, abilities and needs. The College’s programs and services promote personal and professional success, leadership, critical thinking, civic responsibility and innovation. Its students will become contributing citizens of the complex and changing communities in which they live and work.

To achieve this Mission, we adhere to the following Guiding Principles:

Sierra College will
• Recognize its role in the California Educational Master Plan
• Model excellence in education
• Provide the foundation for lifelong learning
• Support diversity
• Encourage the full development of human potential in a world of growth and change
• Enhance the cultural, intellectual and recreational needs of the college and community
• Foster environmental awareness and individual responsibility
• Understand and contribute to the economic well-being of the community
• Plan for and wisely allocate resources based on an annual, comprehensive, District-wide Program Assessment and Review (PAR) process.

At Sierra College, we facilitate learning, inspire change and build community.
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**SIERRA COLLEGE CATALOG 2006-2007**  
5
A Brief History of Sierra College

The origin of Sierra College is somewhat uncertain. Some have said that the College may have begun with the establishment of Sierra Normal College and Business Institute in 1882. It was a small, private college at the location of today’s Placer High School in Auburn. Most think that Sierra College is an outgrowth of the Placer Union High School District.

In 1914, the Placer Union High School District, stretching from Loomis to Lake Tahoe, was born. That same year, college-level classes were offered. The new college was named Placer Junior College. It was the fourth oldest junior college in California at the time and only one of nine statewide; the faculty numbered four.

Due to enrollment loss caused by World War I, Placer Junior College was abandoned by 1920, but the college idea never completely died. In 1936, the College was re-established, again in Auburn, with the enthusiastic support of local voters. It is 1936 that Sierra College uses as its official date of birth.

Three wings of buildings were constructed to serve primarily Placer Junior College, but Placer High School students shared many of the facilities, instructors and organizational structure with the new college. Enrollment numbered about 100 and the College athletes went by the name “Spartans.” The College grew steadily and by 1938, 200 students were enrolled.

Enrollment crested at 282 in 1939, but events quickly overtook the College in the 1940s. The 1941 attack on Pearl Harbor essentially ended enrollment by men as many went off to serve their country. Additionally, enrollment dropped significantly when Americans of Japanese ancestry were forced into internment camps. The student population dropped to 53 by 1943. The college eliminated the “Junior” from its name, becoming Placer College.

The war’s end brought returning veterans, the end of internment and the GI Bill of Rights. Enrollment in the post-war years exploded as a result. 1946 saw 467 students—about half were veterans. 856 were enrolled in 1949 and the Placer College facility was bursting at the seams. The College had reached full capacity and efforts to find a new location began. Area population continued to grow and the need for new facilities grew acute. In 1953, Placer College was renamed Sierra College and its athletes gained a new nickname—the “Wolverines.”

In 1957, the new Sierra Junior College District successfully passed a bond measure to pay for new facilities. In
1958, a site selection committee considered thirty-five possible locations and the present Rocklin site was chosen.

In 1961, the new Rocklin campus opened and enrollment reached 1,500. In 1962, Nevada County joined Placer County, forming a huge new Sierra Junior College District, which then had more square miles—3,200—than students.

Enrollment boomed in the 1960s. By the end of the decade, Sierra College boasted 100 full-time faculty members and nine new campus buildings. Enrollment was nearly 4,000. However, as fast as new facilities could be built, they were filled. The next several decades saw significant student population growth. From 1970 to 1990, enrollment jumped from 4,000 to nearly 14,000 and by the year 2000 the College enrolled approximately 18,000.

In 1996, the 105-acre Sierra College-Nevada County Campus was opened. Twelve locations in that county had been considered until property between Grass Valley and Nevada City was chosen.

Leased centers were opened in the Tahoe/Truckee and Roseville areas. Classes were also taught at local high schools and community centers. Projections on future “for credit” enrollment top well over 25,000.

Today, the Sierra Community College District includes all of Placer and Nevada Counties and parts of El Dorado and Sacramento Counties. Sierra College serves an economy as diverse as its population and geographical district. Railroad and agriculture are no longer the dominant industries, as construction, retail business, technology and service industries have come to characterize the district’s economy. In recent years, Placer and Nevada Counties have been two of California’s fastest growing areas.

The College District continues to experience dramatic growth and change with the ongoing development of computer and information technologies. Alternative delivery systems for educational and student services are evolving, making education more accessible. Sierra College continues to adapt to meet the ever-changing needs of today’s students while promoting learning as a lifelong process.

*
SUMMER 2006
May 15  INSTRUCTION BEGINS for Summer Courses
July 4   Holiday
Aug. 18  End of Summer Courses

FALL SEMESTER 2006
Aug. 28  INSTRUCTION BEGINS—DAY AND EVENING
Aug. 28–Sept. 9 Last Days to Apply, Register and Make Program Changes
Sept. 2-4 Holiday (Labor Day)
Sept. 11  First Census Day
Sept. 22  Deadline to Initiate Credit By Examination (Challenge)
Sept. 29  Last Day to File CR/NC
Oct. 6    Last Day to Request December 2006 Degree or Certificate
Nov. 6    Last Day to Withdraw from Course and Receive a “W”
Nov. 10–11 Holiday (Veteran’s Day)
Nov. 23–25 Holiday (Thanksgiving)
Dec. 16   Semester Ends

SPRING SEMESTER 2007
Jan. 16   INSTRUCTION BEGINS—DAY AND EVENING
Jan. 16–27 Last Days to Apply, Register and Make Program Changes
Jan. 29   First Census Day
Feb. 9    Deadline to Initiate Credit By Examination (Challenge)
Feb. 15   Last Day to File CR/NC
Feb. 16–19 Holiday (Presidents’ Weekend)
Mar. 2    Last Day to Request a May 2007 Degree or Certificate
Mar. 29   Last Day to Withdraw from Course and Receive a “W”
Mar. 30   Last Day to Request August 2007 Degree or Certificate
April 2–7 Holiday (Spring Vacation)
May 10    Commencement—Nevada County Campus
May 11    Commencement—Rocklin Campus
May 11    Semester Ends

This calendar is subject to change.
Contact the Admissions and Records Office or check the class schedule for registration information.
EDUCATIONAL PROGRAMS

General Education: A range of courses to help students gain a breadth of knowledge about the environment, the natural sciences, the social and behavioral sciences, the humanities and the skills of communication and critical thinking, to become aware of cultural differences, to develop in them a sense of self esteem, to assist them in maintaining their health and fitness and to enable them to achieve their goals. This gives students a basic understanding of the world they live in.

Degree/Certificate Programs: Courses in a variety of majors leading to associate degrees, licenses, certificates of achievement and skills certificates.

Transfer Curriculum: Courses that meet general education and pre-major requirements equivalent to the first two years at a four-year college or university to which students may transfer with junior standing.

Vocational Education: Programs to prepare students for employment or to update their job skills in industry, business and technical fields.

Basic Skills: Pre-collegiate courses to prepare students for college-level work.

Innovative Educational Programs: Courses offered in a nontraditional manner, including courses via Internet and interactive television classes transmitted throughout the community to give individuals an opportunity to participate regardless of where they live in the District. Also includes international studies, field study, gallery study, fast track and open access/early exit courses.

Workforce Development & Continuing Education: The Workforce Development & Continuing Education Division provides workforce training, business development and lifelong learning education. The Division’s services are offered through Training & Development, the Center for Applied Competitive Technologies (CACT), the Small Business Development Center (SBDC), Community Education and the Osher Lifelong Learning Institute.

STUDENT SERVICES

Counseling Services: Professional counselors provide assistance with vocational and academic assessments, career planning, course advisement, transfer assistance and personal counseling. The counseling staff includes licensed marriage, family and child counselors, as well as nationally certified career counselors.

Support Services: Services include financial aid, health services, scholarships, tutoring, housing, re-entry support, admissions and records and support for disabled students.

GOVERNANCE

The Sierra College community determines its educational and other policies through a shared process involving students, classified support staff, faculty and administration. An association or senate formed by each group advocates the group’s interests. In addition, the process provides a forum for anyone in the community to air concerns.

The Student Senate actively represents the students in the College’s committee work and planning. The organization also promotes student activities and clubs as well as providing information on current events for the student body.

The Classified Senate represents the College’s support staff on professional matters.

The Academic Senate, under authority from Title 5 of the Education Code, represents all faculty on academic and professional matters.

The Management Senate represents educational administrators, supervisory and confidential employees on professional matters.
Each of the organizations represents its constituency with a formal voice in determining educational policy, procedures and regulations as well as coordinating its representatives on all committees and councils.

The Strategic Council consists of representatives from each of the above senates, the student association, the classified and faculty unions and other staff by virtue of their positions in the organization. Its purposes are to convey the views of the campus community, to share in the decision making and to assist in communicating and interpreting college policies. To ensure open access and to promote communication within the college community, any individual or group may submit concerns to the Strategic Council.

The Board of Trustees is the elected governing body of Sierra Joint Community College District and has the final authority to establish policy for current and long-range educational plans and programs, promote orderly growth and development and ensure fiscal responsibility.

ACADEMIC FREEDOM
Sierra College is committed to the principles of academic freedom, as stipulated in Sierra College Board Policy 4030.

CENTER FOR APPLIED COMPETITIVE TECHNOLOGIES (CACT)
The Center for Applied Competitive Technologies (CACT) serves small to medium sized manufacturing and technology companies by providing technical assistance, technology transfer and workforce training. Services are delivered via demonstrations, workshops and business consulting. For further information see the website at www.sierracollegetraining.com/cact.php.

COMMUNITY EDUCATION PROGRAM
The Community Education Program provides convenient classes and activities to meet the needs and interests of our diverse community for enrichment and personal and professional growth. The Kaleidoscope schedule of short, not-for-credit classes is published in spring, summer and fall. Classes are offered in areas of business, computers, creative arts, food and wine, home and garden, health, money and finance and many other current interest subjects. Additionally, special activities such as College for Kids, Sports Camps, motorcycle training, a Travelogue film-series and trip and travel classes are offered. For further information see the Community Education website at www.sccommed.org.

TRAINING & DEVELOPMENT PROGRAM
The Training & Development program provides fee-based, short-term, not-for-credit customized employee training and process improvement services to help local employers become more competitive. Depending on the employer’s objectives, employee skill level and schedule, the program can provide not-for-credit courses on most workforce training topics of any length, at almost any time and at the employer’s site. For further information see the Training & Development website at www.sierracollegetraining.com.

OSHER LIFELONG LEARNING INSTITUTE (OLLI)
The Osher Lifelong Learning Institute (OLLI) provides noncredit instruction specifically designed to serve the interests of adults 55+ years of age. These classes are short term, typically four to six weeks in length. A variety of course topics are offered, including art, film, fitness, music, nutrition and literature. The Sierra College Osher Lifelong Learning Institute brochure, detailing current courses and registration instructions, is published in spring, summer and fall. For further information see the Sierra College website at www.sierracollege.edu.

FIELD TRIPS
Sierra College is ideally located as a center from which students may have the enriching experience of field trips. With the Sierra Nevada, the ocean and the desert within one hundred miles, trips sponsored by the various instructional divisions are most meaningful. Transportation fees may be assessed.
INTERNSHIP PROGRAMS
An internship is a worksite learning opportunity—a chance for students to have hands-on experience, apply classroom learning and explore and develop skills and knowledge in a particular field or profession. Sierra College offers a two-level internship program. The lower level, called Internship 94, is a Career Exploration internship in which the primary focus is for a student to learn more about a particular field or profession, without extensive previous knowledge or experience. The upper level placements, called Internship 95, are designed for advanced students to expand their knowledge and skills in an area related to their college major. Although some sites offer a wage or a stipend as compensation, most internships are unpaid. Students can earn between .5 and 4 units for internships offered through the Internship Program. Internships may be taken a maximum of four times for credit; the total of all types of internship units cannot exceed 16.

Students applying for internships must be continuing Sierra College students, have a minimum 2.0 GPA and attend a mandatory orientation. A written instructional agreement must also be developed between the instructor, supervisor and student before the student is approved as an intern. Approved interns must enroll in and complete at least seven units including the internship for the semester in which the internship takes place (except in summer sessions when only one other class is required). For more information, contact Career Connections at (916) 789-2617.

SHORT-TERM COURSES
Courses not a full semester in duration are called short-term or fast-track courses. Each course designated short-term or fast-track has its own deadlines. Add, credit/no credit, withdraw and refund deadlines are available at a campus Admissions & Records Office.

SIERRA COLLEGE FOUNDATION
The Foundation was established in 1972 to recognize and encourage charitable gifts from alumni, parents and friends to meet the continuing needs of Sierra College. As an independent, non-profit corporation dedicated to project development, student assistance and educational achievement, the Foundation is supported by financial contributions (cash, memorials, bequests, real estate, trusts) and activities (golf tournaments, dinners, auto fair and other fund-raising events). These donations are channeled toward student scholarships, facility projects and
other community needs. For information, please check the website at www.sierracollege.edu/foundation, call the Foundation Office at (916) 789-2920, or you may write to the Sierra College Foundation, 5000 Rocklin Road, Rocklin, CA 95677.

SMALL BUSINESS DEVELOPMENT CENTER (SBDC)
The Small Business Development Center (SBDC) serves small business owners and entrepreneurs by providing no-cost one-on-one counseling services on a variety of subjects, including business planning and feasibility, management, marketing, accounting, finance, licensing compliance, environmental safety, government procurement and regulations affecting businesses. They also provide low-cost seminars on such topics as Business Success, Business Planning, Marketing and Cash Management. The SBDC provides services at various locations throughout Placer, Nevada, Sierra, Plumas, Lassen and Modoc Counties. For further information see the SBDC website at: www.sbdcsierra.org.

SPEAKERS BUREAU
The Speakers Bureau is designed to acquaint community members with Sierra College and its fine staff. Faculty and staff are available to address a variety of timely subjects at meetings of community groups and organizations. For information, contact Marketing/Public Relations, (916) 781-0411.

ADVISORY COMMITTEES
To insure that meaningful curricula in the two-year occupational programs are maintained, advisory committees, comprised of specialists in the subject matter area, meet to advise on program emphasis and change. See individual committee membership, page 281. *
ELIGIBILITY
Admission to Sierra College is open to any person who:
1. Has a high school diploma, GED, or passed the high school proficiency examination, or
2. Is over 18 years of age and capable of profiting from instruction.

ADMISSION PROCEDURES
All new students or students returning to Sierra College after an absence of one or more semesters must submit an application for admission prior to registering for classes. Electronic applications are available online at www.sierracollege.edu. Paper applications, also available in Spanish and Russian, may be requested at a campus Admissions & Records Office. High school and college transcripts are not required for admission; however, students are encouraged to bring copies when they meet with counselors for advising.

Each semester the college offers registration opportunities to those who file an application for admission and complete the matriculation process. Dates are published in the schedule of classes or may be obtained by calling (916) 781-0430 or (530) 274-5302.

SPANISH
Si necesita ayuda para llenar la solicitud de admision, llame ud. al telefono (916) 781-0400.

RESIDENCY REQUIREMENTS
For the purpose of determining tuition and enrollment fees, Sierra College students are subject to the legal residence restrictions established by the California legislature. Residency is determined at the time of admission and will require a statement of legal residence. Supporting documentation may also be required.

California residency shall be given to students who qualify under one of the following conditions:
1. If 19 years of age or over, has resided in California and has “manifested the intent” to make California their residence for at least one year and one day prior to the beginning of the semester.
2. If 18 years of age and both the student and the student’s parent or legal guardian have resided in California and have “manifested the intent” to make California their residence for at least one year and one day prior to the beginning of the semester.
3. If under 18 years of age and the student’s parent or legal guardian has resided in California and has “manifested the intent” to make California their residence for at least one year and one day prior to the beginning of the semester.

Any student not meeting one of the above requirements will be classified a nonresident. New regulations allow certain students to apply for nonresident tuition waivers. Contact the Admissions & Records Office for further information.

Nonresident students who wish to reapply for resident status must submit a new residency statement. Residency documents should be submitted to a campus Admissions & Records Office the semester prior to the change of status.

INTERNATIONAL STUDENTS
International students attend Sierra College from around the world. Each semester more than 40 different countries are represented at the college. Regardless of TOEFL scores, all students will take assessment tests to determine placement in appropriate courses. Based on test results, college-level and/or ESL courses will be recommended. Assistance with the application and registration process is provided by the International Students Office (ISO), located in the Winstead Center. Contact the ISO directly.
A non-refundable application processing fee of $100.00 payable to Sierra College in the form of a credit card, wire transfer, cashier’s check, or check drawn on a U.S. bank (do not send cash). The $100.00 will be credited toward tuition at the time of registration.

Priority Application Deadlines:
- Fall semester: July 1
- Spring semester: December 1
- Summer sessions: May 1

Mandatory Sierra College Health Insurance
All international students attending Sierra College must purchase mandatory health insurance. There are no exceptions, even for students who have health insurance through their home countries. The average cost per year is $718.00.

Other Important Health Information
When traveling from country to country, a student may be exposed to different diseases. Sierra College strongly encourages the following immunizations: Tetanus, Measles and Rubella.

ACADEMIC ENRICHMENT
Sierra College provides special part-time admission to 9th–12th grade students. The program is open to any student who, in the opinion of the Superintendent/President or designee, can benefit from instruction.

Students must submit a Sierra College application for admission and an Academic Enrichment Form. Enrollment must be recommended by the school principal and parent/guardian. Students must take a basic skills assessment, participate in orientation and meet with a Sierra College counselor prior to participation in the Program. Students admitted under these provisions will be subject to all college rules and regulations. Please contact a campus Admissions & Records Office for more information.
Matriculation, in its usual use, means, “The steps one takes to get to and through college.” At Sierra College, Matriculation means an agreement between the college and each student as to the steps both will take to help ensure the student succeeds.

Agreement:
Sierra College will:
• Assess students’ basic educational skills and career goals
• Orient students to the college’s programs, services and policies
• Provide top-quality instruction and services
• Offer a wide variety of courses
• Offer services to support students’ education
• Follow up on students’ progress toward educational goals

Students will:
• Participate in Assessment and Orientation
• Declare an educational major
• Meet with a counselor to design an educational plan
• Attend courses and work hard to complete them
• Seek out support services as needed
• Strive to make progress toward goals

Matriculation and Registration: Students must complete assessment, orientation and counseling prior to registration. New students who complete at least two of these components will be allowed to register during the regular registration period.

Assessment: Assessment in reading, English and mathematics helps to determine student skill levels and needs. Results are used by counselors to assist students with selection of courses and developing a Student Educational Plan (SEP). The Assessment Center also offers English as a Second Language (ESL) and Ability to Benefit (ATB) testing.

Orientation: Sierra College staff provide information about programs, services and registration procedures. Students who complete orientation are prepared to meet with a counselor.

Counseling: Students meet individually with a counselor, who helps them develop their educational plan, refers them to appropriate services and answers specific questions and concerns.

Exemptions: Some students are exempt from the requirements of Matriculation. Nevertheless, students are encouraged to avail themselves of these services. Students are exempt if they meet any of the following criteria:
• Hold an Associate’s or Bachelor’s degree;
• Apply with a selected educational goal of “personal enrichment;”
• Apply with a selected educational goal to “maintain certification or license;” or
• Other criteria as determined by the Sierra College Board of Trustees.

Students who have completed orientation or assessment at another college can have those portions of the matriculation requirements waived. Please submit evidence to the Assessment or Counseling Offices at the Rocklin Campus, Nevada County Campus, Roseville Gateway Center, or Truckee Center.

Challenges or Appeals to Matriculation: Students may request a waiver of any matriculation requirement due to extraordinary circumstances; or may review the regulations covering matriculation and file a complaint if the student believes any of these regulations are not being met. All complaints, appeals, or requests for information should be directed to the Matriculation Office in the Winstead Center on the Rocklin campus.

CONTINUING AND FORMER STUDENT REGISTRATION
Registration appointments are mailed to continuing and former Sierra College students. Students returning after an absence of one semester or more must have a current application on file to receive an appointment. Check the class schedule for application deadlines. Priority is based upon the total number of units the student has completed at Sierra. Students with the most units receive the earliest appointments. Students can register at the designated date and time or at any time thereafter during scheduled hours of registration. Students are encouraged to use e-Reg web registration at www.sierracollege.edu, PASS telephone registration (916) 632-5000 or from Nevada County (800) 292-5002, or walk-in registration during their scheduled
appointment time to ensure the best possible course selection. There is a $2.00 non-refundable fee per semester to add classes using e-Reg or PASS systems; walk-in registration is available at no charge.

**Disabled students** (physical, hearing, or learning) should contact the Disabled Student Programs and Services Office to make arrangements for advising and registration.

**WAIT LISTS**
At the professor’s discretion, a course may have a wait list available. Once a course has reached the maximum enrollment, students are given the option to be placed on a limited size wait list. This option must be chosen at the time of registration. The wait listed course cannot conflict with other courses in the student's registration schedule. A student may be added to only one wait list in a particular subject, i.e., one English 1B course. The student’s schedule will show both registered and wait listed courses. Being on a wait list does not mean the student is registered in the course. At the start of the semester, the student must attend the first course meeting. If any seats are available in the course, the professor will offer the seats to wait listed students based on their position on the wait list and will issue a 4-digit add code or sign the registration form.

To officially register in the course, a wait listed student must register on e-Reg or PASS using the 4-digit add code or submit the signed registration form to a campus Admissions & Records Office within the late registration period. After the first class meeting, the course professor has no obligation to continue to use the wait list.

**LATE REGISTRATION**
A student’s success is enhanced by completing the matriculation process before the start of the semester. However, if this is impossible, late registration is available during the first two weeks in the fall and spring semesters. Permission of the class professor is required. The professor will supply each student with a 4-digit add code that will allow the student to add the course on e-Reg web registration, PASS telephone registration, or in person at a campus Admissions & Records Office. Professors may also sign registration forms which will need to be submitted to a campus Admissions & Records Office. All course fees must be paid at that time. Students will then be officially enrolled. Each semester, refer to the class schedule for registration details and deadline dates and times. Course registration will not be processed after the withdraw deadline under any circumstances. Late registrants are expected to complete the matriculation process during their first semester at Sierra.

**FEES, EXPENSES AND REFUNDS**
All tuition, enrollment and health fees must be paid at the time of registration. Students with “holds” on their records for unpaid fees, fines, etc., must clear the holds before registration will be permitted. Sierra College reserves the right to use methods permitted by law to collect fees due, including referral to a collection agency.

**ENROLLMENT FEE**
Sierra College charges a State-mandated enrollment fee of $26.00 per unit each semester. Recipients of CalWORKs, SSI/SSP, General Assistance, or qualified dependents of deceased or disabled veterans may be exempt from the enrollment fee. Check with the Financial Aid Office at least one week prior to registration for fee credits, fee waivers, grants and other means of financial assistance.

**NONRESIDENT STUDENT TUITION**
Under state law, all community colleges are required to charge tuition to out-of-state residents and international students. The charge for the 2006-2007 catalog year is $160.00 per unit. The tuition is in addition to the enrollment fee.

Recent legislation allows a waiver of nonresident tuition for students meeting the following criteria: Attended a California high school for at least three years and one of the following:
• Graduated from a California high school;
• Earned a California GED; or
• Passed the California high school proficiency examination.

Undocumented aliens are also eligible for this waiver if, in addition to the above criteria, they have applied for legalization or intend to do so as soon as they become eligible. Please contact an Admissions & Records Office for information.

**NON U.S. CITIZEN FEE**
In addition to the enrollment fee and nonresident student tuition, foreign students (permanent residents, temporary residents, F-1 & M-1 student visa), must pay a Non U.S. Citizen Fee of $6.00 per unit. This fee is mandatory unless students can show “economic hardship”. Students wishing to apply for an economic hardship waiver must submit the completed paperwork to an Admissions & Records Office.

**Definition of Economic Hardship:** Victim of persecution or discrimination in the foreign country in which the applicant is a citizen and resident, or who is a recipient of benefits under the Aid to Families with Dependent Children Program, the Supplemental Income/State Supplementary Program, or a general assistance program.

**HEALTH FEE**
The mandatory health fee provides students with a range of medical services at the Sierra College Health Centers. The Sierra College health fee is charged each semester as follows:

• $14.00 for students enrolled in a fall or spring semester course(s) on the Rocklin or Nevada County Campus ($10.00 for summer session);
• $6.00 for students enrolled in a fall, spring, or summer course(s) at the Roseville Gateway Center, Truckee Center or at an off-campus site, Saturday classes only, in a maximum of 1/2 unit of credit, or on-line or cable TV courses only.

Exemptions are given for:

• Students enrolled in Supportive Education classes only;
• Students attending an approved apprenticeship program;
• Students who are dependent upon prayer for healing (contact the Health Center or an Admissions & Records Office for the exemption form prior to registration);
• Low-income students (must have Financial Aid Office approval one week prior to registration).

**STUDENT CENTER FEE**
A Sierra College student body election resulted in approval of a mandatory Student Center Fee, designated solely for the purpose of funding and operating a student center. The non-refundable fee, charged for the Fall and Spring semesters, is $1.00 per unit, to a maximum of $5.00 per semester. Exemptions are given for:

• Students in an approved apprenticeship program;
• Students in Supportive Education classes only;
• Students enrolled in Osher Lifelong Learning Institute classes only;
• Students enrolled in In-Service classes only;
• Low-income students (must have Financial Aid Office approval one week prior to registration).

**PARKING FEE**
Every vehicle using the Rocklin or Nevada County Campus parking facilities must display a valid parking permit, clearly visible through the driver-side, front windshield of the vehicle, or a valid DMV disabled person license plate or placard. Semester parking permits may be purchased during registration at a campus Admissions & Records Office, from the Business Office, weekdays, 8:15 a.m. to 4:15 p.m. or from Police Services (west entrance) from 5:00 p.m. to 9:00 p.m. Monday through Thursday. Students receiving financial aid may be eligible to purchase a permit for a reduced fee. Contact the Financial Aid Office for details.

**Regular Semester Fee:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard permit</td>
<td>$40.00</td>
</tr>
<tr>
<td>Standard permit (Financial Aid Eligible)</td>
<td>$20.00</td>
</tr>
<tr>
<td>Carpool permit</td>
<td>$30.00</td>
</tr>
<tr>
<td>Motorcycle permit</td>
<td>$10.00</td>
</tr>
</tbody>
</table>
Summer Intersessions:
Standard permit .................................. $14.00
Carpool permit .................................... 10.00
Motorcycle permit ................................ 4.00
Daily permits are available for $1.00 per day at permit dispensers located in parking lots.

Parking permits are not transferable. A parking permit does not guarantee that a parking space will be available. Parking citations will be issued to vehicles without permits. For more information regarding parking fees, rules, or refunds, contact Police Services at (916) 781-0570, or visit website http://police.sierracollege.edu.

ADDITIONAL SEMESTER EXPENSES*
The following are approximate costs of other fees and expenses for a full-time student for one semester:
Room and Board (on-campus) .................. $3,250.00
Books .................................................. 300.00
Transportation (by car) ............................ 400.00
Personal (clothes, recreation, etc.) ............ 400.00
Student Identification Card Fee (established by the Associated Students Executive Council) ........ 10.00
*Estimates are subject to change. Personal expenses vary with individual student needs and tastes.

REFUNDS
Enrollment and Health Fees are refundable to students who withdraw themselves from a full-term course by the deadline published in the Class Schedule. Short-term course refund deadlines are not published. Students should contact their professor or an Admissions & Records Office for specific deadline. A $10 refund processing fee will be retained once each semester.

Nonresident/international student tuition is refundable for reduction of unit load if the student withdraws from full-semester courses during the first two weeks of a semester. Short-term courses have their own deadlines.

One-half of nonresident/international student tuition is refundable if the student withdraws from Sierra College within the first six weeks of a semester, or the first two weeks of a summer session. Check the Class Schedule for deadline dates.

Parking Permit—Applications for refunds will be accepted during the first two weeks of a semester or the first three days of a summer session. Applicants must present their parking permit to Police Services along with a completed parking refund request form. Allow six weeks for refund.

POTENTIAL FEE ADJUSTMENTS
An increase in fees resulting from changes initiated by Sierra College will not be billed to the student if less than $5.00 but may result in a financial “hold” being placed on the student’s records. The amount will be collected at the next registration or when the student applies for a degree, certificate, or transcript as provided for in the Education Code, Section 72237.

HOPE SCHOLARSHIP
In accordance with the Taxpayer Relief Act of 1997, Sierra College will mail Tax Form 1098-T at the end of January to each student who paid enrollment fees in the prior calendar year and who was officially enrolled as of the course census date. This information will also be provided to the IRS. This form will only confirm enrollment. Sierra College is not required or able to identify the total amount received for fees. It is the student’s responsibility to provide proof of payment in accordance with IRS regulations. Please check with your tax preparer to determine if you are eligible to take advantage of this tax credit or contact the IRS directly at (800) 829-1040 or at www.irs.gov. The records of students who have chosen an assigned identification number will not be reported.*
ADVANCED PLACEMENT EXAMINATION CREDIT
Sierra College accepts certain Advanced Placement Exams passed with a score of three or higher. Currently enrolled students are awarded up to six units of credit upon submission of official exam results. The amount of credit awarded is based on the recommendations of the American Council on Education. Credit will be awarded for a Sierra College course or courses, or as elective credit.

Transfer students are cautioned that, regardless of Sierra College policy, some institutions determine Advanced Placement credit based on their own local policies and may recalculate credit. For further information please consult a counselor. To request credit, students must submit a General Student Petition and request that the College Board send official Advanced Placement Exam results to a Sierra College Admissions & Records Office (College Code 4697).

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP) CREDIT
Students with scores of 500 or better on College Level Examination Program (CLEP) tests in Social Science, Humanities and Natural Science may receive 6 units of elective credit for each score. A maximum of 18 units may be granted. To request credit, students must submit a General Student Petition and an official copy of the test scores to a campus Admissions & Records Office. Credit granted will have no bearing on the student’s GPA. Students must complete 12 units at Sierra before CLEP credit will be awarded.

HONORS COURSES
Many courses offered at Sierra College may, with the instructor’s permission, be taken for Honors credit. Students who are interested in a more challenging classroom experience may contract with a willing instructor for honors credit. Completion by a student of the Honors contract with an earned course grade of A or B will result in a notation on the student’s transcript indicating that the course was passed “with Honors.” For more information contact a campus counseling office.

HONORS SOCIETY
Sierra College students who have completed 12 units of transferable course credit at Sierra College with a 3.5 GPA are eligible to join the college’s Beta Mu Zeta chapter of Phi Theta Kappa International Honor Society of the Two Year College. The purpose of Phi Theta Kappa is to recognize and encourage scholarship among two-year college students. Phi Theta Kappa provides opportunities for the development of leadership and service, for an intellectual climate for exchange of ideas and ideals, for lively fellowship for scholars and eligibility to apply for Phi Theta Kappa Transfer Scholarships. For additional information, contact Dr. Harry L. F. Houpis, PTK Advisor, or Tim Haenny, Campus Life Coordinator.

STUDY ABROAD
Since the Study Abroad Program began at Sierra College in 1986, a number of our students have pursued summer or semester studies in Austria, China, Costa Rica, England, France, Italy, Mexico, Russia and Spain. Students have earned credit for academic work while learning about another culture through direct experience.

Classes are taught by Sierra College faculty, with foreign instructors teaching as necessary. Most classes
taught abroad transfer to four-year colleges and universities throughout the U.S. as part of the articulated California Community College curriculum.

To learn about foreign study opportunities, contact Christine Vona, Study Abroad Coordinator, (916) 781-7198.

**TRANSFER CREDIT ACCEPTANCE**
Transfer credit is granted for all lower-division degree applicable college courses completed at other regionally accredited institutions. Students who have completed courses at other colleges should meet with a counselor to determine if any of the courses fulfill Sierra’s degree or certificate requirements. Transcripts should be obtained from all previous schools attended and provided to the counselor.

If credit is to be applied toward a Sierra College degree or certificate, an official transcript and a “Transfer Credit Request” form must be submitted to an Admissions & Records Office. Students must complete 12 units at Sierra before transfer credit will be posted to students’ records.

**INTERNATIONAL TRANSCRIPTS**
Students who have attended international institutions must request and pay for an evaluation of their international transcripts through one of the following agencies:
- Educational Records Evaluation Service
- International Education Research Foundation, Inc.
- World Education Services, Inc.

The evaluation must include a course by course review which determines semester unit value, grade and lower/upper division status. In most cases, students will be granted elective credit only for lower division course work completed at international institutions. No credit will be granted for upper-division courses. Students wishing to be granted credit for specific general education or major courses must submit course descriptions in English with a course substitution petition. For further information please contact a counselor.

**TRANSFER ARTICULATION AGREEMENTS**
Sierra College maintains written articulation or course agreements with many transfer colleges and universities. These agreements specify how courses will be accepted at the transfer institutions. Counselors and the Transfer Center have copies of the agreements. For information regarding transfer please contact a Sierra College counselor. Articulation information is also available at www.assist.org, this information should be interpreted with the assistance of a counselor.

**2 + 2 ARTICULATION PROGRAM**
2+2 Articulation is a planned process linking programs and services to assist students in making a smooth transition from secondary to postsecondary levels without experiencing delays or duplication of learning. Sierra College has developed “2+2” articulation agreements with many area high school and ROP programs which make it possible for students to gain college credit for specified courses once they have enrolled at Sierra College and have completed other requirements of the agreement.

Students who have completed any of these articulated courses should have received a certificate acknowledging the completion, along with instructions on how to secure credit. After students enroll at Sierra College, they must petition for credit by contacting the Sierra College professor of record in the discipline area that corresponds with their high school, adult school, or ROP class.

**MILITARY SERVICE CREDIT**
A veteran who has been on active duty one year or longer and has received an honorable discharge may request 2 units of health education and 3 units of elective credit for military service to be applied toward an associate’s degree. Credit will not transfer to a four-year university and will have no bearing on the student’s GPA. To request credit, students must submit a General Student Petition and a DD-214 form to an Admissions & Records Office. Students must complete 12 units at Sierra before military credit may be awarded.

Veterans receiving VA educational benefits through the Sierra College Veterans Office must apply for Military Credit by the end of their first term of enrollment, regardless of the number of units completed at Sierra.

**GENERAL EDUCATION & IGETC CERTIFICATIONS**
Students transferring to California State Universities may request that a General Education Certification be sent along with the final Sierra College transcript. There is also a standardized general education pattern called IGETC (Intersegmental General Education Transfer Curriculum) available for both CSU and UC transfers. See a counselor for more information on General Education or IGETC Certification Programs.

**LOWER DIVISION TRANSFER PATTERNS (LDTP)**
The Lower Division Transfer Patterns (LDTP) is a program sponsored by the California State University (CSU)
and supported by the California Community Colleges that presents potential transfer students with the most direct path to a bachelor’s degree in the CSU system. The ultimate goal of the LDTP is to identify a set of “road maps” for students to follow that will increase their academic preparation and decrease their time to graduate once they enter the CSU. Students who elect to follow the LDTP option will receive the highest priority for admission to a CSU campus.

Highest priority for admission is defined as a written guarantee that is granted at the time the student accepts the offer of the LDTP agreement from a specific CSU campus subject to satisfactory completion of the requirements of the agreement between the student and the CSU. Students will be asked to complete a distinct set of general education and major courses which are common to all CSU campuses and identify a major program with a CSU campus once they have completed 45 transferable units.

In addition, students will complete a set of major courses specific to the campus they select to meet the required 60 units needed to transfer to CSU as an upper division transfer student. Through CSUMentor (http://www.csumentor.edu/), counselors and students will be able to obtain more information regarding the process of entering into an LDTP for a specific campus and major, “road maps” detailing coursework by campus and major and a transfer planner for students to track their progress through the LDTP program. See a counselor for further information.

TRANSCRIPTS
Official academic transcripts may be obtained through the following methods:

- Students may request transcripts online at www.sierra.college.edu. Standard service requires five to seven business days to process at a cost of $5.00 per transcript. Priority service is also available at a cost of $15.00 per transcript. Upon receipt of a signed release form, priority service takes three business days to process.
- Students may request transcripts through the mail or in-person at a campus Admissions & Records Office. Processing time is 20 business days. The first two transcripts requested are free. All subsequent transcripts processed will cost $5.00 per transcript. Processing times do not include U.S. Postal Service mailing time. For more information on ordering transcripts, please contact a campus Admissions & Records Office, (916) 781-0430 or (530) 274-5302.

STUDENT RECORDS
Student records are maintained in the Admissions & Records Office. Students are responsible for supplying an Admissions & Records Office with current name and address information to insure receiving registration appointments, financial aid check disbursements, etc.

The Family Education Rights and Privacy Act (Section 438, Public Law 93-380) requires educational institutions to provide: students access to official educational records directly related to the student; explanation of education records and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate; that the college must obtain written consent of the student before releasing personally identifiable information about the student from records other than a list of persons and agencies specified by the Act; and that these rights extend to present and former students of the college. The act provides that the college may release certain types of directory information (see Directory Information). Students wishing to review their education records must make written requests listing the item or items of interest to the Dean, Student Services. Only records covered by the Act will be made available within 15 working days of the date of the request.
ATTENDANCE
Sierra College regards attendance at all classes and laboratory sessions as an important student obligation.

A student will be allowed six hours of class absence (excluding excused absences) for a three-unit, three-hour-per-week, full-term course. All other courses will be prorated in a ratio of one hour of absence to nine hours of class meeting time. Professors will communicate any exception to this attendance regulation. Professors may or may not drop students for nonattendance and assign a “W” up to the last day for students to withdraw.

There is no penalty for excused absences, provided the work is made up. Excused absences are those for personal illness, illness or death in the family, pregnancy related occurrences, field trips, athletic events, co-curricular activities, or other school business. The student is responsible for notifying the professor in advance of such absences when possible and is always responsible for any missed work.

It is the student’s responsibility to discuss excessive absences with the professor. In the event of excessive absence, a professor may require the student to have a conference with a college nurse practitioner. A student dropped by a professor in error may petition the professor for reinstatement to the class.

DIRECTORY INFORMATION
Directory information includes name, address, phone number, date and place of birth, most recent other institution attended, major, participation in officially recognized activities and sports, weight and height of athletic team members, dates of attendance, degrees and awards received. Upon request, the college may release this information to military recruiters and the media. Students who do not wish this information to be released must file a “Restriction to Access” with an Admissions & Records Office during the first two weeks of the semester or the first three days of summer session.

OPEN CLASSES
It is the policy of Sierra College that, unless specifically exempted by statute, every course offered and maintained by the district shall be fully open to enrollment and participation by any person who has been admitted to the college and who meets such prerequisites established pursuant to the California Code of Regulations, Title 5.

Students may not enroll in courses which meet at the same or overlapping time. Additionally, students may not enroll in more than one section of the same course unless it is designated as repeatable.

ENROLLMENT STATUS
Students are responsible for their enrollment status at all times. Credit will not be given for courses in which the student is not officially enrolled. For purposes of student enrollment verifications, a full-time student is considered to be one enrolled in 12 or more units during a semester. A half-time student is one enrolled in 6-11 units and a part-time student is one enrolled in less than 6 units. For summer session, 4 units is considered full-time.

DROPPING AND WITHDRAWING FROM CLASSES
Full-term classes dropped within the first two weeks of the semester will not appear on the student’s academic record. Short-term and summer session classes have their own deadlines which can be verified with a campus Admissions & Records Office. Classes dropped after this period will appear on the student’s record as a withdrawal “W”. Students may drop/withdraw from classes on e-Reg web registration, PASS telephone registration or in person at a campus Admissions & Records Office. Professor signatures are not required. It is the student’s responsibility to drop or withdrawal from courses according to published deadlines. Students should refer to the class schedule for specific drop and withdrawal deadlines.

ILLNESS OR EMERGENCY LEAVES OF ABSENCE
Sierra College does not grant medical leaves of absence or medical withdrawal from classes. Students who are absent for at least two consecutive weeks due to illness should obtain written documentation from their care provider to give to class professors.

A student may withdraw up until the withdrawal deadline for the class. Incompletes are granted at the discretion of the professor. Regardless of illness, the student is responsible for all missed assignments and examinations.
Academic Regulations

GRADING
Pursuant to section 55758 of Title 5, the grading practices of the District shall be as follows:
A—4 = Excellent
B—3 = Good
C—2 = Satisfactory
D—1 = Passing, less than satisfactory
F—0 = Failing
CR = Credit (at least satisfactory); units awarded not counted in grade point average.
NC = No Credit (less than satisfactory or failing); units not counted in grade point average.
I = Incomplete academic work for unforeseeable, emergency and justifiable reasons at the end of the academic term.
IP = The In Progress symbol denotes that the class is in progress.
RD = The Report Delayed symbol is used when there is a delay in reporting the grade of a student.
W = Withdrawal from class or college is authorized through two-thirds of the course, as posted in the class schedule. The academic record of a student who remains in class beyond that date will reflect a grade other than “W.” Courses dropped prior to first census, or its equivalent for short-term courses, will not appear on the student’s academic record.
MW = Military Withdrawal. Military withdrawal is assigned when a student who is a member of an active or reserve United States military service receives orders compelling a withdrawal from courses. Verification of such orders is required. Military withdrawal is not counted in progress probation and dismissal calculations.

Since professors have the responsibility for evaluating student performance and assigning final grades, students are encouraged to discuss their grades with professors at any time. All grades are final and are not subject to change except as outlined in Education Code Section 76224.

Note: A professor may issue a failing grade “F” to any student who is guilty of cheating or plagiarism. The failing grade “F” will be placed on the student’s academic record whether or not the student chooses to withdraw prior to the official withdrawal deadline. Such students will not be allowed to apply for a grade change at a later date, nor repeat the course to have the “F” grade removed from the G.P.A.

Grades will be available approximately four weeks after the end of each semester. Students may access grades on the Sierra College Web site at www.sierracollege.edu, or on the PASS system at (916) 632-5000.

UNITS AND GRADE POINTS
The unit of work at Sierra College is the semester hour. The semester hour is one lecture hour per week for the equivalent of an 18 week semester, or approximately three hours of laboratory work per week for one semester. Two hours of outside preparation are required for each hour of lecture or recitation. Hours per week may be adjusted based on the length of the term.

All college work is measured in terms of both quantity and quality. The measure of quantity is the unit and the measure of quality is the grade point.

Grade points will be awarded as follows: Grade A, four points per unit; B, three points per unit; C, two points per unit; D, one point per unit; F, zero points.

Non-Degree credit courses shall not be included in calculating student degree applicable grade point average.
PROBATION

Academic Probation: A student who has attempted at least 12 units at Sierra College and has earned a cumulative grade point average of less than 2.0 in all units attempted, shall be placed on academic probation. Students on academic probation may be held to a student educational plan developed with a counselor.

Progress Probation: A student who has enrolled in at least 12 units at Sierra College and has entries of “W,” “I,” or “NC” in fifty percent or more of the total units attempted, shall be placed on progress probation. Students on progress probation may be held to a student educational plan developed with a counselor.

Removal from Probation: Pursuant to Section 55755 of Title 5, California Code of Regulations, students on academic probation shall be removed from probation when the cumulative Sierra College grade point average is 2.0 or higher.

Students on progress probation shall be removed from probation when the percentage of “W,” “I,” and “NC” units at Sierra College drops below fifty percent.

DISMISSAL

Pursuant to Section 55756 of Title 5, California Code of Regulations, students on academic probation shall be subject to dismissal if their cumulative grade point average is less than 2.00 in all units attempted in each of three consecutive semesters*, excluding summer, or if their cumulative grade point average is less than 1.00 in each of two consecutive semesters attended, excluding summer.

Students who are on progress probation shall be subject to dismissal if the percentage of “W,” “I,” and “NC” units in at least three consecutive semesters* reaches or exceeds fifty percent, excluding summer.

Upon notification of dismissal, the student will not be eligible to enroll in any classes for one semester. A student who has been dismissed may request readmission after one semester. Contact a counselor for further information.

*For purposes of these conditions, semesters shall be considered consecutive on the basis of the student’s enrollment (i.e., Fall semester followed by another Fall semester shall be consecutive if the student was not enrolled in the Spring semester.)

PRESIDENT’S HONOR ROLL AND DEAN’S LIST

Full-time students earning a grade point average of 3.5 or better are included on the President’s Honor Roll each semester. Those students who earn a grade point average of 3.0 to 3.499 are placed on the Dean’s List. To qualify for the President’s Honor Roll or the Dean’s List, students must complete 12 or more units of graded work (A, B, C, D, or F) at Sierra College. Credit by Examination and courses taken for Credit/No Credit do not apply.

COURSE PREREQUISITE, COREQUISITE AND ADVISORY POLICY

It is the intent of Sierra College to guide students to courses in which they will have the greatest chance of academic success. Therefore, some courses listed in this catalog have either a prerequisite, a corequisite, or advisory preparation. If no prerequisite, corequisite or advisory information is indicated there are no conditions of enrollment. The following are the definitions for prerequisites, corequisites and advisory preparation:

“Prerequisite” means a condition of enrollment that students are required to meet in order to demonstrate current readiness for enrollment in a course or educational program.

“Corequisite” means a condition of enrollment consisting of a course that students are required to simultaneously take in order to enroll in another course.

“Advisory” means a condition of enrollment that students are advised but not required to meet before or in conjunction with enrollment in a course or educational program.

Students will be asked to certify their prerequisite status. Students who have met the prerequisite or corequisite at another college, must make evidence of this completion available. Students who cannot demonstrate that they have met a prerequisite or corequisite may be dropped from registration in a course.

Any prerequisite or corequisite may be appealed by a student on one or more of the grounds listed below:
1. The student has the knowledge or ability to succeed in the course or program despite not meeting the prerequisite or corequisite;
2. The student will be subject to undue delay in attaining the goal of his or her educational plan because the prerequisite or corequisite has not been made reasonably available;
3. The student believes that the prerequisite or corequisite has been established in violation of regulations and/or the College’s policy and procedures; or
4. The student believes that the prerequisite or corequisite is unlawfully discriminatory or is being applied in an unlawfully discriminatory manner.

To appeal a prerequisite or corequisite, students must obtain a Prerequisite Appeal form from an academic division office or a Counseling Center. Once submitted, the appeal will be reviewed within five working days. If the appeal is approved, the student will be permitted to enroll in the course or program.

REMEDIAL COURSEWORK LIMIT
Students are limited to no more than thirty (30) semester units of credit for remedial coursework. These non-degree credit, pre-collegiate basic skills courses are taught in reading, writing, computation, and English as a Second Language, and are usually numbered in the 500 series. Students enrolled in English as a Second Language, and students identified as having a learning disability are exempted from the unit limitation. In addition, students may petition for a waiver of the unit limitation if they show significant, measurable progress toward the development of skills appropriate to enrollment in college-level courses. For further details, contact a counselor.

COURSE REPETITION
State-mandated regulations severely limit the repetition of courses taken at Sierra College. Students found to be enrolled in a course not identified as repeatable will be dropped from the course. Refunds will be provided automatically. Repeat regulations are as follows:
1. A course may not be repeated if a “C” grade or better was earned unless the course is identified as repeatable in this catalog.
2. If a “D,” “F,” or “NC” was earned in a non-repeatable course, students may repeat the course only once. Upon repetition the first attempt remains on the transcript but is no longer used in the GPA computation. The grade received for the second attempt will be used to compute the student’s GPA, regardless of the grade received.
3. If a course is identified as a repeatable course and students earn a grade of “D,” “F,” or “NC,” the course repeat limitations do not change. Courses offered for variable units must be repeated for the same or greater number of units.
4. Students who received a “W” may repeat the course.
5. Students may repeat a course if it is a legally mandated training requirement as a condition of continued paid or volunteer employment. The grade received each time the course is completed will be included for purposes of calculating the student’s GPA. Courses approved for mandated training requirements indicate that they may be repeated for credit to meet legally mandated requirements within the course description.
6. Students with an “incomplete” grade in a course MAY NOT register for the course again.

Transfer students are cautioned that, regardless of Sierra College policy, some institutions may recompute GPA based on their own course repetition policies. For further information please consult a counselor.

COURSE REPETITION—SPECIAL CIRCUMSTANCES
There are occasions when a student may need to repeat a course in which a passing grade has been received. Special circumstances warranting such repeats include:
1. To regain former knowledge or verification of recency of knowledge after a lapse of some years, normally three.
2. When significant changes in technology, methodology and content have occurred.
3. When a higher grade is required by a specific educational program.

Students wishing to repeat a course under this regulation shall file a Repeat Special Circumstance Petition with an Admissions & Records Office prior to enrollment. The petition must include counselor and/or professor review, verification and recommendation and division dean approval.

A course that is repeated under special circumstances will not be counted in calculating a student’s grade point average, nor will the student receive units.

For further details, contact a counselor or a campus Admissions & Records Office.

Disabled students should contact the Disabled Students Programs and Services Office for special accommodation.
GRADE DISPUTES AND GRADE CHANGE

PETITIONS

Education Code specifies that the instructor’s determination of student grades shall be final except in cases of:

- Mistake—some unintentional act, omission, or error by the instructor;
- Fraud—a deliberate misrepresentation of the truth for the purpose of inducing another to part with something valuable or to surrender a legal right;
- Bad Faith—intent to deceive, in an act of dishonesty;
- Incompetence—a lack of ability, legal qualification, or fitness to discharge a required duty.

A student who feels that an instructor has given an evaluative grade (A, B, C, D, F, CR, NC) based on a mistake, fraud, bad faith, or incompetence and has evidence to substantiate the claim, must take the following steps:

**First Step**—discuss the matter with the course instructor no later than sixty (60) instructional days after the end of the term or semester. If the concern occurs in the summer or between semesters and the student is unable to contact the course instructor, the student should contact the appropriate area educational administrator. If the concern is not resolved satisfactorily at the first step, then continue to the second step.

**Second Step**—within ten (10) days from completing the first step, discuss the matter with the appropriate educational administrator/area Dean. The administrator will attempt to resolve the dispute and will respond to the student in writing within ten (10) days. If the concern is not resolved satisfactorily at the second step, then continue to the third and final step.

**Final Step**—the student may appeal the educational administrator’s decision in writing to the Academic Standards Committee. The Academic Standards Committee will respond in writing within twenty (20) instructional days of receiving the appeal during fall and spring terms and within sixty (60) instructional days during a summer term. The decision made by the Academic Standards Committee is final.

Any approved grade change must be submitted on a “Grade Change Petition” form to a campus Admissions & Records Office within one year of course completion.

PETITION FOR AN INCOMPLETE

If, due to an emergency or for justifiable cause, a student has not completed academic work at the end of the semester, an incomplete “I” grade may be requested. It is the primary responsibility of the student to request an incomplete. If a student feels an incomplete is warranted, the student may obtain an “Incomplete” petition from a campus Admissions & Records Office or Extension Center Office and submit it to the professor for approval. If approved, the professor will file a written record of the required conditions for removal of the “I” and the grade to be assigned in lieu of removal. The student may not enroll in the course again, but should work with the professor to complete the academic work no later than one year after the end of the semester or session in which the incomplete was assigned. The student must submit a grade change petition upon completion of the work.

OVERLOAD REQUEST

Students may not enroll in more than 18 units without submitting an overload request. To be granted an overload of up to 20 units, a student must:

1. Have completed 12 or more units with a 3.0 GPA.
2. Not be on probation.
3. Be eligible for English 1A by assessment or satisfactory completion of English A, E.S.L. 30W, or equivalent.
4. Meet the reading proficiency requirement by assessment or satisfactory completion of English 1B, 1C, 11, 50, N, History 35, Philosophy 4, or equivalent.
If a student’s GPA is 2.8-2.9 and all other requirements have been met, student must have completed 30 or more college units.

If a student wishes to enroll in more than 20 units, in addition to the above listed requirements, a student must have completed 18 or more units, of which 15 units must have been completed in a single semester. This request will be reviewed for approval by the Dean, Student Services.

CREDIT BY EXAMINATION (CHALLENGE PETITION)

Students may request to challenge a course offered by the college if they have prior knowledge or experience in the subject area. To be eligible to challenge a course, a student must:
1. NOT be enrolled in the course;
2. Not have completed nor enrolled in a more advanced course;
3. Have approval of the challenge request from both the course professor AND division dean;
4. Have not challenged more than 15 units and
5. Be currently enrolled in and complete at least one course other than the course being challenged.

Courses must be challenged for a letter grade. A course in which a student enrolls and receives a grade of “D”, “F”, “NC”, or “I”, may not be challenged at a later date, nor may a course be challenged again to improve the grade. Units received through the challenge process do not count toward the 12 units in residence required for the associate degree or the full-time enrollment necessary for honor roll determination. Some private institutions will not accept course credit earned through the challenge process.

To request a challenge, a student must file a “Challenge Petition” form within the first four weeks of the semester or the first week of the summer session. Regulations are stated on the Challenge Petition. Please note: Many courses are not available for the challenge process.

Appropriate challenge fees must be paid when the petition is submitted. For California residents, this is equivalent to the enrollment fee. Nonresident and international students must also pay the appropriate nonresident/international student tuition. BOGG fee waivers do not cover challenge fees. Fees paid are non-refundable.

CREDIT/NO CREDIT GRADING

“Credit/No Credit” grades exist to permit students to attempt a class in which they are interested but feel the risk of failure may be high. Students may elect to take one regularly scheduled class per semester on a credit/no credit basis unless the catalog expressly limits the grading for a particular class to a letter grade only (A, B, C, D, F). The provision is subject to the following regulations:
1. The course must be outside the student’s major.
2. Students must submit a Credit/No Credit petition by the end of the first 30% of the semester or summer session. Check the class schedule or with a campus Admissions & Records Office for deadlines.
3. A grade of “A,” “B,” or “C” will become a Credit, a grade of “D” or “F” will become a No Credit.
4. A “Credit” grade may not be repeated. A “No Credit” grade may be repeated only once and for credit/no credit only.
5. Once filed, the petition for CR/NC cannot be withdrawn nor the decision be reversed; however, changes in major may result in CR/NC grades being changed to letter grades after review by the Academic Standards Committee.

ACADEMIC RENEWAL

Past substandard academic performance may not, for a variety of reasons, be reflective of a student’s subsequent demonstrated ability. Academic renewal permits the alleviation of all or part of such substandard academic performance at Sierra College in cases where the past work may impair the student’s progress toward a legitimate educational or career goal. Grades approved for renewal will remain on the
student’s transcript; however, the grades will no longer be included in the computation of the student’s GPA.

A request for academic renewal must meet the following guidelines:
1. The student must have completed a minimum of 18 units with a cumulative grade point average of 2.5 or higher in all courses attempted since taking the courses to be alleviated.
2. A minimum of 12 months must have elapsed since the substandard grades were earned.
3. The number of units alleviated may not exceed 30 units, or be in excess of the number of units satisfactorily completed by the student since taking the courses to be alleviated, whichever is lower.
4. Academic Renewal can only be applied to “D” and “F” grades.

A student seeking academic renewal must meet with a Sierra College Counselor to complete an Academic Renewal petition. The petition must be signed by the counselor before it is submitted to a campus Admissions & Records Office. If any of the required 18 units are earned at another college, an official transcript must be submitted with the petition. The Academic Standards Committee will review the request. For further information, contact a counselor or an Admissions & Records Office.

**AUDITING**

Auditing allows students to attend a course without officially registering. There is no record of attendance and no grade will be issued. Completion of assignments and tests is not required. Students may audit one course per semester with the instructor’s permission. Please note priority is always given first to students who register for credit and auditing is on a space available basis. Field trip courses may not be audited.

A $15 per unit non-refundable audit fee will be charged along with the health fee and any other appropriate course fees. Contact an Admissions & Records Office for an audit petition and further information. ★
Student Services

**CALWORKS**
CalWORKs is a program that assists students who are current CalWORKs recipients. The CalWORKs program provides eligible students with advocacy counseling, child care funds, work study opportunities for on-campus and off-campus employment, assistance with campus services and referrals to public and private agencies as needed. The CalWORKs program objective is to assist students in achieving their educational and occupational goals. CalWORKs students may contact the Sierra College CalWORKs office at (916) 781-0538 or (530) 274-5322 in order to ensure that they meet their county CalWORKs requirements and can remain at Sierra College for educational training. Sierra College CalWORKs is not part of the county welfare department.

**EXTENDED OPPORTUNITY PROGRAMS AND SERVICES (EOPS)**
Extended Opportunity Programs and Services (EOPS) is a “student success” program that provides access to a college education and job training to those individuals affected by language, economic and social disadvantages. Qualified students may receive academic, career and personal counseling, specialized orientation, free tutoring, financial aid, priority registration, help with the cost of books, transportation assistance, cafeteria meal cards and other services designed to support the student to stay in school and reach their goals. Students must meet certain income and “educationally disadvantaged” criteria to receive services. Please stop by the EOPS office at either the Rocklin (916) 781-0538 or Nevada County (530) 274-5306 campus for further information and application assistance.

**COOPERATIVE AGENCIES RESOURCES FOR EDUCATION (CARE)**
The CARE program provides services for those EOPS students who are single parents/heads of household, who are receiving benefits through CalWORKs and have at least one child under the age of fourteen. CARE students may receive, in addition to the services provided EOPS students, an additional financial aid grant of $800 per academic year to be used for educationally related expenses such as child care, books/supplies, transportation, etc. Contact the Rocklin or Nevada County EOPS office for further information.

**COUNSELING SERVICES**
Sierra College counselors provide academic advising, career and personal counseling to students and prospective students. Typical areas of concern to students are choosing majors or careers that are appropriate to their interests, abilities and values; coping with personal problems that may be causing stress and selecting courses in the proper sequence to meet requirements and educational goals. Counselors also teach classes designed to facilitate personal growth, college success and career exploration. See the “Personal Development” section in this catalog. The staff includes several licensed Marriage, Family and Child Counselors and Nationally Certified Career Counselors.

Counseling is available day and evening, by appointment and on a drop-in basis at each of the following locations. For appointment information call:
- Rocklin Campus (916) 781-0478
- Nevada County Campus (530) 274-5303
- Roseville Gateway Center (916) 781-6200
- Truckee Center (530) 550-2225
ASSESSMENT CENTER
The Rocklin Campus Assessment Center provides a comprehensive range of assessment services. Basic reading, English and mathematics skill assessment is required of all new non-exempt students prior to registration. English as a Second Language (ESL) and Ability to Benefit (ATB) assessments are also provided through the Center. It is recommended that all students who are continuing with their studies and have never been assessed complete the assessment process. Students who are transferring to Sierra from other colleges and have been assessed should submit assessment results to the Assessment Center for evaluation.

Assessment results will be interpreted by counselors and utilized in the advising and course selection process. Assessment is a component of the Matriculation process required by state mandate to facilitate student academic success.

The Center also provides a wide range of assessment services to assist with educational planning. Interest, skill and value clarification inventories are available upon recommendation by a Sierra College career counselor. These services are offered to students and community members at a nominal fee. For further information, contact the Assessment Center at (916) 781-0496 or stop by the Center located in the Winstead Center, on the Rocklin Campus.

Assessment services are also provided at the Nevada County Campus. For further information, contact the Admissions Office at (530) 274-5302.

TRANSFER CENTER
The Transfer Center offers resources and services to all students. The Center facilitates the transition from Sierra College to a baccalaureate college or university. The Center reduces the complexity of transferring by using articulation and transfer agreements, major preparation workshops and application/personal statement workshops.

Sierra College has transfer admission agreement programs with U.C., Davis, U.C., Santa Cruz, U.C., San
Diego, U.C, Santa Barbara, U.C., Riverside, Sonoma State, San Francisco State and University of the Pacific. Admission counselors from local universities such as U.C., Davis; C.S.U., Sacramento; C.S.U., Chico; and University of the Pacific visit the Center regularly. Information about admission, specific majors, general education requirements and transfer procedures is provided. Transfer workshops are offered throughout the year. The Center maintains current catalog information for California public and private schools, out-of-state schools and Historically Black Colleges and Universities. The Transfer Center is located in the Winstead Center (L Building) at the Rocklin Campus. For information, call (916) 789-2618.

Transfer information is also available at the Nevada County Campus. For information about transfer at the Nevada County Campus call (530) 274-5303.

**CAREER CONNECTIONS**

Career Connections offers resources to assist students in making career decisions, researching employment opportunities and developing job search skills. It houses a variety of printed materials, which includes information about current Sierra College majors, labor market trends, job search techniques, occupations, career decision making and employment. It is equipped with several interactive computerized career information systems which aid students in career development and planning, researching occupations and researching financial aid and scholarship information. Career development workshops related to career decision making and job search skills are offered each semester.

Career Connections also offers students a variety of experiential career exploration opportunities including informational interviews, job shadowing and internships. All of these opportunities are designed to help students explore career options and obtain first-hand information regarding their field of interest. Career Connections maintains a database of local professionals and businesses that have offered to assist students with their career exploration. There is also a listing of local professionals available to serve as guest speakers for classes or other forums.

Students are encouraged to visit Career Connections often as part of their regular study time and to take advantage of the materials and activities available to them. Members of the community who wish to use the computerized career information systems may schedule one-hour periods for a fee. For additional information about Career Connections, call (916) 781-0597 for the Rocklin Campus, call (530) 274-5303 for the Nevada County Campus, or visit www.sierracollege.edu/careerconnections.

**HEALTH SERVICES**

Sierra College Health Centers offer a wide variety of services. Nurse practitioners, a mental health counselor and a physician staff the clinics. Students are encouraged to utilize these services, which include:

- Education about healthy living and disease prevention;
- Evaluation and treatment of students, who are ill, injured or need family planning;
- Referrals to on-campus and community resources;
- Needed laboratory testing;
- Personal counseling;
- Immunizations; and
- Some prescriptions at reduced cost.

The Rocklin Campus Health Services Clinic is located in the Winstead Center. For further information call (916) 781-0517.

The Nevada County Campus Health Services Clinic is located in C-105. For further information call (530) 274-5317.

**HOUSING**

Campus housing consists of two residence hall facilities on the Rocklin Campus, North Hall and U-Building. North Hall is a two-story coed residence hall housing residents in double rooms with a connecting bath to a second double room. U-Building is a single story men’s residence hall housing residents in double rooms.

Each North Hall resident shares a room with one other person and shares a bath with three other persons. U-Building residents share community style restroom facilities. A large recreation room, a study room and laundry facilities are available for residents. Basic utilities are included as well as a meal plan in the school cafeteria. In-room telephones are each student’s responsibility. Since campus housing is limited, applications should be filed as early as possible. Campus housing applications and information may be obtained by calling the Housing Office at (916) 781-0434. The Housing Office is located in the Z Building.

**DISABLED STUDENT PROGRAMS & SERVICES**

Additional support services are available to disabled students to ensure an equal opportunity to participate in the
student services

educational process at Sierra College. The goal is to help physically, communication and learning disabled persons achieve their educational objectives through counseling and other appropriate services.

For the Rocklin Campus or Roseville Gateway Center Disabled Student Services Center, call (916) 781-0592.

For the Nevada County Campus or Truckee Center Disabled Student Services Center call (530) 274-5330.

JOB PLACEMENT CENTER
The Financial Services office at the Rocklin Campus and at the Nevada County Campus assist currently enrolled Sierra College students in obtaining part-time jobs.

Currently, the college offers three on- and off-campus employment programs. These are:

Federal Work Study—Students must qualify under Federal guidelines.

District Student Help—This program is to assist students who do not qualify for Federal Work Study. Students must be enrolled in at least one course and maintain a 2.0 GPA.

CalWORKs Work Study—Students must be currently receiving TANF or CalWORKs Assistance.

All programs pay on the Temporary Employee wage scale. Each program has special enrollment and academic requirements.

For further information regarding these programs, contact the Rocklin Financial Services Office at (916) 789-2623 or the Nevada County Campus at (530) 274-5346.

LEARNING DISABILITIES PROGRAM
THE LEARNING OPPORTUNITIES CENTER
Sierra College offers a strong support program for students with verified learning disabilities. Services are provided to assist students in developing the skills they need to meet the academic demands of college and benefit fully from their educational experience.

A learning disability affects the information processing systems of individuals with average or above intelligence. This interference may affect intake, retention, retrieval, or expression of information. Students are evaluated individually through the Learning Disabilities 610 assessment course. The following support services are then provided for eligible students:

- Individual education plans
- Identification of students’ learning styles
- Perceptual Development Program
- Test taking facilitation
- Compensatory learning strategies
- Tutorial support
- Computer Assisted Instruction
- Accommodations as needed
- Priority registration

Sierra College is committed to supporting learning disabled students in reaching their academic or vocational goals. For further information regarding this program please call the Rocklin Campus at (916) 781-0553, or the Nevada County Campus at (530) 274-5330.

LIBRARY/LEARNING RESOURCE CENTER
The Rocklin Campus Library occupies a new 68,000 square foot building, with seating for more than 600. Reference and research information can be obtained electronically through Ebsco host, ProQuest Research Library and other full-text electronic products. There is no charge for printing articles retrieved.

The open-stack book collection contains more than 90,000 volumes and paper subscriptions to several hundred serials are maintained. The computerized data bases contain over 4,000 magazine titles, all full text, with many years of back-files. An online catalog provides access to the Sierra College-Nevada County Campus and Rocklin collections. A media laboratory is available for use by all members of the campus community. The media collection contains both videos and DVDs; most are captioned.

The Rocklin Campus Library is also the site where broadcast origination of all television courses occurs. This program enables students to learn at home by interacting with
• Instructors who meet periodically throughout the semester for training and discussion in order to help maximize students’ learning;
• Workshops throughout the semester that help students improve their skills in many different areas; and
• Support to help students succeed and achieve their goals.

Students enter the program primarily through assessment testing. After taking the assessment test, students make an appointment for a one-hour orientation session, followed by a one-on-one appointment with a counselor who will help them enroll in courses suited to their particular skill level.

Even if students assess into higher-level courses, they can still choose to enroll in Student Success courses in order to master concepts and achieve greater academic success across the curriculum.

Courses in the program include:

- C.I.S. 1, 30 . . . . . . . basic computer skills
- C.I.S. 5, 20 . . . . . . . keyboarding and document processing
- C.I.S. 37 . . . . . . . basic online skills
- English 501, A . . . . . writing
- English 560, 570, 50 . . reading
- E.S.L. 500, 510, 520, 530 . . writing, reading, listening
- Lrn. Dis. 610 . . . . . learning disabilities assessment
- Lib.Sci. 10A, 10B . . . finding information
- Math. 581 . . . . . . . . . . arithmetic
- Math. 582 . . . . . . . . . . pre-algebra
- Math. A . . . . . . . basic algebra
- P.D. 1 . . . . . . . . . . college success
- P.D. 6 . . . . . . . . . . career and life planning
- P.D. 8 . . . . . . . . . . college orientation

For more information, call (916) 781-0476. Also, see the Remedial Unit Limitation, pages 25 and 52.
SUPPORTIVE EDUCATION
The Supportive Education program at the Rocklin Campus offers adult education courses in basic fundamentals of math and reading, job search skills and motor development to meet the varied needs of students with physical and developmental disabilities. For information, please call (916) 781-0598 or 789-2633.

VETERANS SERVICES
Sierra College is approved to offer higher education to veterans and eligible dependents under Chapters 30, 31, 32 and 35, of Title 38 U.S. Code and Chapters 1606 and 1607 of Title 10 U.S. Code. The Veterans Office at the College certifies student enrollment to U.S. Department of Veterans Affairs for educational benefits and monitors matriculation requirements and course enrollments to ensure program requirements.

Matriculation Requirements: All students are required to have official transcripts from all prior colleges, universities and training institutes on file with the Sierra College Veterans Services Office. In addition, students must complete the Matriculation process which includes completing assessment in reading, English and mathematics, attending orientation and meeting with the Sierra College Veterans Services academic counselor. New students must complete these requirements before the start of the first semester.

Application Procedures and Deadlines: Students must reapply for V.A. benefits each semester. For information or to apply for benefits, please contact the Sierra College Veterans Services Office at the Rocklin Campus or call (916) 781-0439.

Benefit Coverage: Payment of benefits is based on the number of units in which a student is enrolled. When applying for V.A. benefits, students must declare a major. Benefits will be paid only for courses required for that degree. Once a satisfactory grade has been earned, Veterans may not repeat that course and receive benefits. Benefits are restricted on some types of courses. Students should always check with the Sierra College Veterans Services Office before registering for courses.

VA Standards of Progress: In addition to the standing Sierra College policy on probation/dischissal, students receiving V.A. education benefits must maintain a minimum cumulative GPA of 2.0. Failure to maintain a cumulative GPA of 2.0 or better after two consecutive semesters will be reported to the U.S.D.V.A. as maintaining Unsatisfactory Progress and V.A. educational benefits will be discontinued. Students reported on Unsatisfactory Progress must receive Sierra College V.A. academic counselor approval before recertification is possible. In order to ensure that satisfactory progress can be achieved, the counselor may impose unit limits and/or require courses for which the V.A. will not pay. Students shall be removed from Unsatisfactory Progress when the cumulative GPA is 2.0 or higher.

Veteran Dependent Exemption: The children and spouses of U.S. Veterans with service connected disabilities or veterans who have died in service or from service-connected disabilities may be eligible for waiver of college fees and/or for a small monthly payment. For more information contact your county Veterans Services Office or the California Department of Veterans Affairs.

TUTORIAL SERVICES
The Tutor Program is available for all students currently enrolled in courses at Sierra. Students determine their need for tutoring and a professor or counselor will recommend that the student seek tutorial assistance. Free tu-
torial services are provided to Sierra students if they are enrolled in the course(s) for which a tutor is requested.

Students do not need to be failing a course to receive tutorial assistance; in fact, students very often seek tutor assistance to maintain understanding or to further expand their information base. Tutor sessions are determined by the individual student’s schedule of available hours.

Students who have received A’s or B’s in various subjects are encouraged to inquire as to the possibility of becoming paid tutors.

For further information, contact the Rocklin Campus Tutor Center at (916) 789-2902, Learning Resource Center, Room 402; or the Nevada County Campus Tutor Center at (530) 274-5308, Room L-210, or our website at http://www.sierracollege.edu/stu_services/tutor_center/index.html.

WRITING CENTER
The Sierra College Writing Center, at the Rocklin Campus, provides students with professional support and guidance in all writing projects, regardless of course level or assignment complexity. Students may come to the Writing Center, fourth floor of LRC Building, at the Rocklin Campus, for any of these services.

The Writing Center staff is committed to helping all students complete writing assignments successfully and on time, regardless of the student’s academic preparation or language background. For further information, call (916) 789-2727.

SIERRA COLLEGE CHILD DEVELOPMENT SERVICES
Sierra College offers several Child Development Programs for students and the nearby community. The Sierra College Child Development Centers serve as teacher training lab sites for Sierra College students pursuing careers working with children and families. Students are supervised by staff and faculty. All programs are staffed by certificated, nurturing teachers who view learning as an active process where children learn best and gain self-confidence when ample opportunities exist for direct hands-on experiences and decision making in a planned “play” oriented curriculum.

Sierra College offers State Preschool Programs at no cost to income eligible families. State Preschool serves 3 to 5 year olds and operates two sessions on the Rocklin campus, as well as two at Rock Creek Elementary in Auburn, one at the Sierra College-Nevada County Campus in Grass Valley and one at Cirby Elementary School in Roseville. The sessions operate from 8:30 a.m. to 11:30 a.m. and 12:30 p.m. to 3:30 p.m.

The Little Orchard Preschool on the Rocklin Campus is a private fee based program. It is open from 7:00 a.m. to 6:00 p.m. Monday through Friday. The program is designed for children from 2 to 5 years of age. Enrollment is determined on a first come, first serve basis, serving the community and children of Sierra College students and staff. The center offers preschool sessions as well as a full day program. Call (916) 624-3553 for a tour. Additionally, the Nevada County Campus operates a fee based program for preschoolers, ages 3 through 5.

For further information call:
Rocklin Campus Child Development Center (Little Orchard) (916) 624-3553
Rocklin Campus State Preschool (916) 797-5179
Nevada County Campus Child Development Center (530) 274-5350
Cirby State Preschool—Roseville (916) 783-0776
Rock Creek State Preschool (530) 823-0380

POLICE SERVICES
The District Police Services Office is located at the west entrance to the Rocklin Campus. Police Services at the Nevada County Campus is located in the P Building across the street from the Administration Building. The department is responsible for the general protection of persons and property within the District and for providing campus law enforcement services. Parking administration and enforcement is also managed by Police Services. Officers are responsible for enforcing parking regulations, traffic laws, local ordinances and state laws,
responding to emergencies, taking crime reports, unlocking/locking facilities and providing public assistance. Some of the services available include vehicle jump starts, security escorts, vehicle unlocking and lost and found.

Dial extension 1111 for emergencies or 1000 for non-emergencies, from any of the help phones located throughout the Rocklin and Nevada County campuses and parking areas, or any campus extension phone. Dial extension 2570 for routine business calls or 781-0570 from non-campus phones. Contact Police Services immediately if someone needs medical help, there is an accident, a crime in progress, suspicious activity, or you are the victim of a crime.

**SIERRA COLLEGE BOOKSTORES**

Sierra College Bookstores believe in supporting the needs of students, staff and community. We are dedicated to providing high-quality services to our customers and to maintaining full-service bookstores. Textbooks for all Rocklin, Roseville Gateway and Tahoe/Truckee campus classes can be ordered online at http://sierra.campusstores.com. Sierra College merchandise, including t-shirts and sweatshirts, can also be ordered online.

Books may be sold back at any time for up to 50% of the original selling price. No receipt is required and it doesn’t matter where the books were purchased.

**Rocklin Campus Bookstore hours:** Monday through Thursday from 7:30 a.m. to 6:30 p.m., Fridays from 7:30 a.m. to 4:30 p.m., with extended hours the first and last week of each semester. For further information call (916) 781-0500.

**Nevada County Campus Bookstore hours:** Monday through Thursday from 9:00 a.m. to 1:00 p.m. and 1:45 p.m. to 6:30 p.m., Fridays from 7:30 a.m. to 4:30 p.m., with extended hours the first and last week of each semester. For further information call (530) 274-5305.

**Roseville Gateway Campus Bookstore hours:** Hours change regularly. Call (916) 781-6259 for current store hours.

**Tahoe/Truckee Bookstore Services:** Books for all Tahoe/Truckee classes are available at the Rocklin Campus store or can be ordered online at http://sierra.campusstores.com. Please call (916) 781-0500 for more information.

Information regarding refund/return policies is available at any Bookstore location.
The primary responsibility of financing an education rests with students and the students’ immediate family; however many students need additional assistance. The Sierra College Financial Services Office provides programs to help those students who cannot meet the full cost of attending the College. The office is located at the Rocklin Campus; for information call (916) 781-0568.

APPLICATION PROCESS
To apply for financial aid, all students must complete a Free Application for Federal Student Aid (FAFSA). The FAFSA uses federal formulas to establish financial need. Continuing students may also use the Renewal FAFSA form to apply for financial aid.

Who Should Apply: Any student who plans to attend Sierra College and is either a citizen or an eligible non-citizen of the United States may apply for financial aid. All financial aid recipients must meet the Satisfactory Academic Progress standards of the College.

Priority Dates: Financial aid funds are limited. Therefore Sierra College has established a priority filing date of March 2nd. Students whose FAFSA’s are mailed by this date are considered for all financial aid programs available at Sierra College. Those filed after March 1st will typically only be considered for a Pell Grant and/or a Stafford Student Loan. The FAFSA should be filed as soon as possible to assure availability of funds when registration fees are due.

Document Requirements: A set of federally-defined criteria identify those students who must provide documentation to support information reported on the FAFSA. This selection is referred to as “Verification.” Students selected for Verification will be notified by the Financial Services Office and asked to verify income and other information. Non-U.S. citizens will also be asked to show proof of eligibility.

FINANCIAL AID PROGRAMS
There are four types of financial aid:
• Grants—that do not have to be repaid
• Federal Work-Study—part-time job opportunities
• Loans—can be borrowed but must be repaid with interest
• Scholarships—based on merit and/or need.

The Federal Pell Grant does not have to be repaid. It is a federally funded program that provides the foundation of a student’s financial aid package. The amount of Pell grant money for eligible students is based on enrollment status.

The Federal Supplemental Education Opportunity Grant (FSEOG) is awarded on a priority basis to students who have demonstrated eligibility for the Pell Grant. The maximum award varies from year to year. This program has limited funds and is generally only available to students with the greatest need who apply by the priority filing date.

Federal Work-Study (FWS) provides part-time jobs for students to work 10-20 hours per week during the school year. The award varies according to the number of hours worked and the type of job. FWS provides an excellent “learning process” through on-the-job-training. The program has limited funds and is generally only available to eligible students who apply by the priority filing date.

California State Grants
The Board of Governors WAIVER (BOGW) waives the enrollment, health and online/telephone registration fees for eligible California residents who:
• Have already qualified for financial aid, such as a Pell Grant or Cal Grant; OR
• Are receiving either: CalWORKs; SSI (Supplemental Security Income); or General Assistance; OR
• A dependent of a deceased or disabled veteran as certified by the California Department of Veterans Affairs.

CAL GRANTS
The State of California, through the Student Aid Commission, sponsors several grant programs for undergraduate students. These include Cal Grants A, B and C. To qualify, students must be U.S. citizens or permanent residents and California residents attending an eligible school or college in California. To apply, both the FAFSA and a GPA verification form must be postmarked by March 2, for the following year.

LOANS
The Subsidized Stafford Loan program enables students to borrow money directly from participating commercial lenders (banks, etc). Students must be in good academic standing, enrolled in at least 6 units and demonstrate financial need. The maximum loan is $2,625 a year for students with less than 30 units and $3,500 a year for those with 30 units or more completed. The interest rate is variable for new borrowers. No interest accrues until repayment begins—six months after the student graduates or drops below half-time.

The Unsubsidized Stafford Loan is available to students who do not have demonstrated need. Interest begins to accrue at the time the loan is taken out. The total of a Subsidized and Unsubsidized Stafford Loan may not exceed loan limits.

Student Emergency Loans provide short-term emergency loans to students receiving financial aid. Students must have completed at least 6 units at Sierra College with a minimum cumulative GPA of 2.0; be enrolled in 6 or more units; have need for the loan; and have some source of income for repayment. Maximum loan is $300 with a 60-day repayment plan.

SCHOLARSHIPS
Many community patrons and organizations establish scholarship awards as a means of expressing confidence in a college and its students. These awards range in amounts from $50 to $500.

Eligibility varies according to individual scholarships. However, at a minimum, students must be enrolled in 6 units or more, have attended Sierra for two consecutive semesters and accumulated 24 college units with a 2.5 grade point average.

Listings and requirements for the various scholarships are published on the Sierra College website at www.sierracollege.edu and also in an annual Scholarship Booklet, available in the Financial Services Office, at the Rocklin Campus, December through February. All applications must be submitted by the posted deadline in February. Students selected to receive a scholarship will be notified in April.

SATISFACTORY ACADEMIC PROGRESS
Federal Regulations require that all students receiving financial aid while attending Sierra College meet established standards of Satisfactory Academic Progress.

To maintain Satisfactory Academic Progress students must:
• Maintain a cumulative 2.0 GPA (C or better) at Sierra College; and
• Complete the following number of units based on their units attempted with a 2.0 GPA

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<tr>
<th>Units Attempted</th>
<th>Units to Complete with 2.0 GPA</th>
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<tbody>
<tr>
<td>12 units or more</td>
<td>= at least 9 units</td>
</tr>
<tr>
<td>9 - 11.5 units</td>
<td>= at least 8 units</td>
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<tr>
<td>6 - 8.5 units</td>
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<td>.5 - 5.5 units</td>
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Students who do not attain Satisfactory Academic Progress at the end of each semester will be placed on probation and will have to meet all satisfactory progress requirements by the end of the semester. Failure to do so will result in Termination for Financial Aid. Under no circumstances will a student be paid retroactively for any ineligible semesters.
**Automatic Termination:** Students who do not complete any courses for which aid was received (i.e., receive “W”s, “I”s, or “F”s in all classes attempted) will be immediately terminated from all financial aid programs.

*NOTE: Financial aid disqualification described here applies to Pell and SEOG Grants, Work-Study and Stafford Loans.*

**Appeals:** Students who have been discontinued from financial aid due to unsatisfactory academic progress have the right to appeal the termination by completing and submitting an Appeal Form to the Financial Aid Advisory Committee.

**Reinstatement:** Students who are disqualified may be reinstated once they have completed a minimum of 6 units with a 2.0 (C) grade point average for one semester (without aid).

**Dropping Units:** Financial aid recipients who drop units or withdraw from the College should notify the Financial Services Office immediately. A review of the student’s award will be made to determine if any reduction or repayment of aid will result from the dropping of units. Any refund of fees for which the student is eligible will be credited to the federal or state financial aid programs from which the student received money.

**Unit Limits:** A student may receive financial aid until a total of 90 units has been earned at Sierra College. Up to 30 units of remedial coursework may be deducted from the total cumulative units. Unusual circumstances may warrant a review of a terminated student’s individual situation such as documented illness, medical or emotional instability and/or high unit requirement for major. Should a student desire such a review, the student should complete and file a 90-Unit Appeal which will be reviewed by the Financial Aid Advisory Committee.

**SELECTIVE SERVICE**

All males under the age of 26 must register with the Selective Service. Failure to do so may jeopardize students’ eligibility for federal financial aid.
**ASSOCIATED STUDENTS OF SIERRA COLLEGE**

All students become members of the Associated Student Body upon enrolling at Sierra College and are guaranteed equal and unbiased representation by their elected representatives of the Associated Students of Sierra College.

**STUDENT GOVERNMENT**

Student activities at Sierra College are managed by the Associated Students of Sierra College. The officers of the Associated Students of Sierra College (ASSC) constitute the Student Senate and represent the Associated Students in promoting student activities and clubs and provide student representation. The ASSC also participates in decisions affecting students and promotes understanding and cooperation between the students, the Board of Trustees and the faculty and administrators of Sierra College. The elected officials consist of President, Vice-President, Activities Director, Public Relations Officer, Secretary, Treasurer and representatives-at-large. A representative of the Nevada County Campus also serves on the Student Senate. All students are encouraged to participate in student government while at Sierra College. The student government office for the Rocklin Campus is located in the K Building, next to the Campus Center and Amphitheatre. For information at the Nevada County Campus, contact the Campus Life Office at (916) 789-2978. All students are invited to attend ASSC meetings.

**ATHLETICS**

Sierra College supports opportunities for student/athletes to continue their pursuit of individual goals academically and athletically by providing a quality program of intercollegiate competition for men and women. Wolverine teams compete in the following:

- **Men’s Sports**—baseball, basketball, football, golf, swimming, tennis and wrestling
- **Women’s Sports**—basketball, cross country and long distance track, golf, soccer, softball, swimming, tennis, volleyball and water polo

Sierra College is a member of the California Community College Commission on Athletics and competes in the Big 7 Conference and the Northern California Football Association’s Mid-Empire Conference. Other members of the Big 7 Conference include American River, Cosumnes River, Diablo Valley, Sacramento City, San Joaquin Delta and Santa Rosa. Other Football teams competing in the Mid Empire Conference include American River, Feather River, Shasta, College of the Redwoods and College of the Siskiyous.

Any student interested in participating should check with the various coaches or the athletic director regarding special rules covering residence, number of units carried, transfers, etc. For information, call (916) 781-0583.

**CAMPUS DINING/CAFETERIA**

The Rocklin Campus Cafeteria is housed in the Campus Center. Hot and cold food service available in the cafeteria includes: deli bar, grill, pizza and a coffee bar. When school is in session the Rocklin Campus cafeteria is open Monday through Thursday 7:00 a.m. to 9:00 p.m., Friday 7:00 a.m. to 7:30 p.m. and Saturday 9:00 a.m. to 1:30 p.m. Summer hours are Monday through Friday 8:00 a.m. to 8:30 p.m.

The Nevada County Campus Cafeteria, located in the “C” building, provides a variety of food and beverage vending machines.
HONORS GRADUATES
Upon graduation, students are recognized with honors when they have completed their degree applicable courses with a cumulative grade point average of 3.5 or better. Other college coursework posted to the Sierra College transcript is included in the GPA calculation.

CATALOG RIGHTS
To fulfill Sierra College degree and certificate requirements, students may have their choice of the catalog in force either upon their entry or upon their exit from Sierra College, whichever is in the best interest of the student. Students who are pursuing a major developed for the first time during their attendance at Sierra College may also choose the catalog in force the first year the major was offered.

To maintain the above listed catalog rights, students must be enrolled in at least one semester or session per calendar year. Enrollment is defined as a Sierra College academic record showing a final grade or non-evaluative symbol (A, B, C, D, F, W, CR, NC, or I).

When a student breaks enrollment for a full calendar year without receiving a degree or certificate, the student will be required to meet the catalog requirements in force upon the student’s return enrollment at Sierra College or the catalog in force at the time the Sierra College degree or certificate is granted.

Students beginning enrollment during the summer should contact the Records/Evaluations Office for further information regarding appropriate entry catalog.

DEGREE PETITIONS
Students desiring an associate’s degree must file a petition with a campus Admissions & Records Office by the following semester deadlines. Allow a minimum of three months for processing.

Graduation Petition Deadline
December, 2006 ..................... October 6, 2006
May, 2007 .......................... March 2, 2007
August, 2007 ....................... March 30, 2007

Students submitting a degree petition must have: a) in progress and/or successfully completed a minimum of 60 degree credit units (12 units of which must be completed at Sierra College); and b) an overall GPA of at least 2.0.

Students may apply for multiple degrees. Courses required in majors MAY be used to fulfill major requirements for more than one degree. Courses used to fulfill the general education requirements MAY NOT at any time be used to fulfill major requirements.

Students requesting a duplicate diploma must submit a $10.00 fee per diploma requested.

PRIORITY FILING PERIOD
Spring 2007 prospective graduates who file a degree petition by September 30, 2006 will be notified of their degree status before the Spring 2007 semester begins.

December 2007 prospective graduates who file by March 30, 2007 will be notified of their degree status before the Fall 2007 semester begins.

CERTIFICATE PETITIONS
Students desiring certificate(s) of achievement or skills certificate(s) must file a petition with a campus Admissions & Records Office by the following semester deadlines.

Certificate Petition Deadlines
December, 2006 ..................... October 6, 2006
May, 2007 .......................... March 2, 2007
August, 2007 ....................... March 30, 2007

Students submitting certificate of achievement petitions must have: a) in progress or successfully completed certificate requirements (50% of required course work must be completed at Sierra College); and b) an overall GPA of 2.0 or higher in courses required for the certificate.

Students submitting skills certificate petitions must have: a) in progress or successfully completed certificate requirements (50% of required course work must be completed at Sierra College); and b) must have grades of “C” or better in all courses required for the certificate.

Students requesting a duplicate certificate must submit a $5.00 fee per certificate requested. *
Sierra College Philosophy for General Education: General education is designed to introduce students to the variety of means through which people comprehend the modern world. General education introduces the content and methodology of the major areas of knowledge: the humanities and fine arts, the natural sciences and the social sciences. The general education program provides the opportunity for students to develop the intellectual skills, information technology facility, affective and creative capabilities, social attitudes and appreciation for cultural diversity that will make them effective learners and citizens.

I. GENERAL EDUCATION BREADTH REQUIREMENTS

A. Natural Sciences (For an A.S. degree: must complete a Laboratory Science. Laboratory classes underlined.)

<table>
<thead>
<tr>
<th>Category</th>
<th>Units Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Sciences:</td>
<td></td>
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<tr>
<td>Agriculture 198, 200, 211</td>
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<tr>
<td>Anthropology 1, 1/14</td>
<td></td>
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<tr>
<td>Biological Sciences 1, 2, 3, 4, 5, 6, 7A, 7B, 10, 11, 14, 19, 22, 33, 35, 36, 44, 55, 56, 56/66</td>
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<tr>
<td>Environmental Horticulture 2</td>
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<tr>
<td>Forestry 1, 5, 1/27</td>
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<tr>
<td>Interdisciplinary 1, 6, 11</td>
<td></td>
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<tr>
<td>Natural Resources 10, 25</td>
<td></td>
</tr>
<tr>
<td>Nutrition &amp; Food Science 12</td>
<td></td>
</tr>
<tr>
<td>Psychology 40, 40/40L</td>
<td></td>
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<tr>
<td>Physical Sciences:</td>
<td></td>
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<tr>
<td>Agriculture 221, 2/11</td>
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</tr>
<tr>
<td>Astronomy 2, 2/11, 2/24, 5, 5/11, 5/14, 10, 10/11, 10/14, 25</td>
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</tr>
<tr>
<td>Chemistry 1A, 1B, 2A, 2B, 3A, 3B</td>
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<tr>
<td>Computer Integrated Electronics 1</td>
<td></td>
</tr>
<tr>
<td>Earth Science 10, 10/10L, 14, 15, 15/15L</td>
<td></td>
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<tr>
<td>Geography 1, 1/14, 4, 4/4L</td>
<td></td>
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<tr>
<td>Geology 1, 1/14, 2, 3, 3/3L, 4, 4/4L</td>
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<tr>
<td>Interdisciplinary 1, 5, 6, 11</td>
<td></td>
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<tr>
<td>Mathematics 30, Natural Resources 10</td>
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<tr>
<td>Physics 2A, 2B, 4A, 4B, 4C, 7, 10, 10/11</td>
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B. Social/Behavioral Sciences

<table>
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<tr>
<th>Category</th>
<th>Units Required</th>
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<tbody>
<tr>
<td>Behavioral Sciences:</td>
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<tr>
<td>Anthropology 2, 4, 5, 7, 9, 27</td>
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</tr>
<tr>
<td>Communication Studies 3, 5, 7, 8, 15</td>
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</tr>
<tr>
<td>Geography 3, Human Development &amp; Family 1, 4, 21, 22, 25, 60, Humanities 3, Interdisciplinary 1, Nutrition &amp; Food Science 10, Psychology 1, 2, 3, 4, 5, 6, 8, 10, 12, 27, 30, 50, 60, Social Science 10, 13, Sociology 1, 2, 4</td>
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<tr>
<td>Social Sciences:</td>
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<tr>
<td>Administration of Justice 50</td>
<td></td>
</tr>
<tr>
<td>Agriculture 198, 215</td>
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<tr>
<td>Business 49, Economics 1A, 1B</td>
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<tr>
<td>Geography 2, 3, 5</td>
<td></td>
</tr>
<tr>
<td>History 4A, 4B, 17A, 17B, 19A, 19B, 20, 21, 22, 23, 24, 27, 35, 50, 51, Interdisciplinary 1, 8, Political Science 1, 2, 3, 4, 7, 8, 9, 12, 15, 16, 27, Social Science 20, 25, 30, 35, Women &amp; Gender Studies 1</td>
<td></td>
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C. Humanities

<table>
<thead>
<tr>
<th>Category</th>
<th>Units Required</th>
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<tbody>
<tr>
<td>Fine Arts:</td>
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<tr>
<td>Applied Art &amp; Design 12, 60</td>
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<tr>
<td>Art 1A, 1B, 1C, 1D, 1E, 2, 3, 4, 5, 6, 7A, 8A, 9A, 10, 11, 12A, 17, 18A, 18B, 19, 20, 22, 24, 31, 32, 33, 34, 40A, 41, 80</td>
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<tr>
<td>Communication Studies 12, Drama 10A, 13, 20, English 19, 20, 21</td>
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<tr>
<td>Human Development &amp; Family 16, Humanities 1, 2, 3, Interdisciplinary 1, 8, Music 2, 6A, 9A, 10, 11, 12A, 12B, 20, 46, 47, 48, 50, 52, 54, Photography 10, 60A, 65</td>
<td></td>
</tr>
<tr>
<td>Literature and Language:</td>
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<tr>
<td>Communication Studies 10</td>
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<tr>
<td>Deaf Studies 1, 2, 3, 4, 5A, 6B, 7A, 24, 25, 26, 27, 29, 30A, 30B, 32, 33, 34, 35, 37, 58, 40, 42, 43, 44, 45, 46A, 46B, 47A, 47B, 48B</td>
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<tr>
<td>German 1, 2, 3, 4, History 4A, 4B</td>
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<tr>
<td>Human Development &amp; Family 44, 45</td>
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<tr>
<td>Humanities 10, 15, 20, 21, Interdisciplinary 1, 5, Italian 1, 2, 3, Japanese 1, 2, Philosophy 2, 4, 6, 10, 13, 15, 20, 21, 27, 30, 50, 65, Spanish 1, 2, 3, 4</td>
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</tbody>
</table>

D. Language and Rationality

<table>
<thead>
<tr>
<th>Category</th>
<th>Units Required</th>
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<tbody>
<tr>
<td>1. English Composition:</td>
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</tr>
<tr>
<td>Business 86, English 1A, 212, English as a Second Language 40W</td>
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<tr>
<td>(completion with a grade of “C” or better)</td>
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<tr>
<td>2. Communication and Analytic Thinking: Business 85, Communication Studies 1, 2, 3, 5, 7, 8, 10, Computer Science 10, English 1B, 1C, 11, 24</td>
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<tr>
<td>History 35, Journalism 20A</td>
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<tr>
<td>Mathematics 8, 10, 12, 13, 15, 16A, 16B, 17, 18, 20, 29, 30, 31, 32, 33, 42</td>
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<tr>
<td>Philosophy 4, Psychology 5, 42</td>
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E. Health Education/Physical Education

<table>
<thead>
<tr>
<th>Category</th>
<th>Units Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of Justice 60</td>
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<tr>
<td>Health Education 1, 2</td>
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<tr>
<td>Health Sciences 2, 7, 20</td>
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<tr>
<td>Nursing Assistant 3</td>
<td></td>
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<tr>
<td>Nutrition &amp; Food Science 4, 5, 10, 12, 13</td>
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</tr>
<tr>
<td>Physical Education 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 24, 25, 26, 27, 35, 36, 39, 40, 42, 43, 44, 51, 53, 54, 55, 56A, 56B, 57, 59, 68, 70, 71, 72, 73, 74, 75, 76, 77, 79, 81, 83, 84, 85, 87, 88, 93, 94, 96, 200, 210</td>
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<tr>
<td>Psychology 30, 50</td>
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</table>

F. Multicultural Studies

<table>
<thead>
<tr>
<th>Category</th>
<th>Units Required</th>
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</thead>
<tbody>
<tr>
<td>Anthropology 2, 4, 7, 9, 27, Art 1D, 1E, 1F, 1G</td>
<td></td>
</tr>
<tr>
<td>Communication Studies 7, 10, Deaf Studies 3, 4, English 24, 25, 26, 27, 47A, 47B</td>
<td></td>
</tr>
<tr>
<td>French 3, 4, Geography 2, 3, 5, German 3, 4, History 17A, 17B, 19A, 19B, 20, 21, 23, 24, 27, 50, 51</td>
<td></td>
</tr>
<tr>
<td>Human Development &amp; Family 25, Humanities 3, 10, Italian 3, Japanese 1, 2, Music 11, Philosophy 13, 15, 27</td>
<td></td>
</tr>
<tr>
<td>Political Science 7, 9, 27, Psychology 3, 27, Registered Nursing 19, 20, Social Science 5, 6, 10, 13, 20, 25, 30, 35, Spanish 3, 4, Vocational Nursing 6, Women &amp; Gender Studies 1</td>
<td></td>
</tr>
</tbody>
</table>

Associate Degree Requirements 2006-2007
II. LEARNING SKILLS:
Courses used to fulfill Learning Skills Requirements of Writing, Reading, Oral Communications and Mathematics may also be used to satisfy either Major or General Education Requirements.

A. Writing: Completion of Business 86 or English 1A or 2 or 12 or English as a Second Language 40W with a grade of "C" or better.

B. Reading: Demonstrated proficiency by ONE of the following:
1. Completion of English 1B or English 1C or English 11 or English 50 or English N or History 35 or Philosophy 4 with grade of "C" or better OR
2. Possession of either a bachelor or higher degree from a regionally accredited institution OR
3. *Satisfactory score on exam (no college units granted).

C. Oral Communications: Public Performance proficiency demonstrated by ONE of the following:
1. Completion of one of the following courses with a grade of "C" or better: Business 85, 102; Communication Studies 1, 2, 3, 5; Drama 10A, 10B; English as a Second Language 40L; Personal Development 9; OR
2. *Written petition certifying acceptable experience and an oral performance to demonstrate proficiency (no college units granted).

D. Mathematics: Demonstrated proficiency by ONE of the following:
1. *Minimum score on ACT of 15 or SAT of 400 (no college units granted), OR
2. *Completion of a mathematics course (algebra or higher) with at least a "C" grade in the last three years of high school (no college units granted), OR
3. Completion of one of the following with grade of "C" or better: Business 64; Mathematics A or higher.

TOTAL GENERAL EDUCATION AND LEARNING SKILLS UNITS ................................................................. 20-33

III. MAJOR:
Minimum of 18 units in pattern of courses described in catalog. No courses may be counted for both the Major and General Education. (ONE EXCEPTION: Transfer Studies major) ................................................................................. 18-49

IV. ELECTIVES:
Any additional degree credit courses ........................................................................................................ 0-22
GRADE POINT AVERAGE: cumulative GPA of 2.0 or better
TOTAL UNITS REQUIRED FOR A.A. OR A.S. DEGREE (At least 12 of 60 required units must be completed at Sierra College) ................................................................. 60

Notes:
1. Credit for only one course from English A, N, 50 or English as a Second Language 30W may be applied toward the degree.
2. See page 41 for Catalog Rights.
3. The A.A./A.S. general education pattern does not necessarily meet transfer general education requirements.
4. Courses used to fulfill General Education Breadth Requirements A - F may be counted in only one of the areas.
5. Students may apply for multiple degrees. Courses required in majors MAY be used to fulfill major requirements for more than one degree. Courses used to fulfill general education requirements MAY NOT at any time be used to fulfill major requirements.

*See Counselor for details.
Sierra College offers both Associate in Arts and Associate in Science degrees. Students planning to graduate with the Associate degree must comply with the graduation requirements stated on pages 42–43. Students should understand that the offering of this catalog is not a contract. Changes in course offerings or other catalog content may be made at the discretion of the college. Contact a counselor for assistance in accurately planning your educational program.

**Accounting:** A.A., A.S.

**Administration of Justice:** A.A., A.S.
- (a) Law Enforcement Concentration
- (b) Courts Concentration
- (c) Corrections Concentration

**Administrative Professional:** A.A., A.S.

**Agriculture:** A.S.

**Animal Science:** A.S.

**Apparel Design & Production:** A.A., A.S.

**Applied Art & Design:** A.A., A.S.
- (a) Graphic Design Concentration
- (b) Illustration Concentration
- (c) Multimedia Concentration

**Art:** A.A.

**Automotive Analysis:** A.A., A.S.

**Biological Sciences:** A.S.

**Business Administration:** A.A., A.S.

**Business Entrepreneurship:** A.A., A.S.

**Business, General:** A.A., A.S.

**Chemistry:** A.S.

**Communication Studies:** A.A., A.S.
- (a) General Concentration
- (b) Graphic Design Concentration
- (c) Multimedia Concentration
- (d) Photography Concentration

**Computer Information Systems:** A.A., A.S.
- (a) Administrative Technical Support Concentration
- (b) Computer Applications Concentration
- (c) Computer Support Concentration
- (d) Internet Concentration

**Computer Integrated Electronics:** A.A., A.S.
- (a) Computer Technology Concentration
- (b) Electronics Technology Concentration
- (c) Mechatronics Technology Concentration

**Computer Science:** A.A., A.S.
- (a) Computer Science Concentration
- (b) Computer Technology Concentration
- (c) Embedded Systems Concentration
- (d) Management Information Systems Concentration
- (e) Web Programming Concentration
- (f) Web Server Administration Concentration

**Computer Service Technology:** A.A., A.S.
- (a) Computer Service Technologist Concentration
- (b) Networking Concentration

**Construction Technology:** A.A., A.S.
- (a) Mill Cabinet
- (b) Residential Building Construction

**Deaf Studies:** American Sign Language: A.A.

**Design Drafting, Computer-Aided Specialist:** A.A., A.S.
- (a) Architectural Concentration
- (b) Mechanical/Civil Concentration

**Early Childhood Education:** A.A., A.S.

**Early Childhood Education—Master Teacher:** A.A., A.S.

**Early Childhood Education—Site Supervisor:** A.A., A.S.

**Electronics (see Computer Integrated Electronics)**

**Engineering:** A.A., A.S.

**English:** A.A.

**Environmental Horticulture:** A.S.

**Equine Studies:** A.S.

**Fashion Merchandising:** A.A., A.S.

**Fire Technology:** A.A., A.S.

**Forestry:** A.S.

**Geology:** A.S.

**Humanities:** A.A.
- (a) Asian Studies
- (b) Diverse Perspectives
- (c) General

**Interior Plantscaping:** A.A., A.S.

**Liberal Arts:** A.A.

**Management:** A.A., A.S.

**Marketing:** A.A., A.S.

**Mathematics:** A.A., A.S.

**Music:** A.A., A.S.

**Natural Science:** A.A., A.S.

**Nursing, Registered:** A.A., A.S.

**Nursing, Vocational:** A.A., A.S.

**Philosophy:** A.A.

**Photography:** A.A., A.S.

**Physical Education:** A.A., A.S.

**Physics:** A.S.

**Real Estate:** A.A., A.S.

**Social Science:** A.A.

**Suburban Agriculture:** A.S.

**Transfer Studies:** A.A.

**Watershed Ecology:** A.S.

**Welding Technology:** A.A., A.S.

**Women’s Studies:** A.A.
Certificate Programs

Certificates are designed to aid the student in gaining initial employment or upgrade current employment in a vocational specialty. Certificates of Achievement and Skills Certificates are in addition to, or in lieu of, but not equivalent to an Associate Degree.

CERTIFICATES OF ACHIEVEMENT
A Certificate of Achievement is an acknowledgment by Sierra College that the student has completed prescribed courses of study in vocational education. All Certificates of Achievement require a minimum of eighteen units with at least a 2.0 grade point average. At least 50% of the required coursework must be completed at Sierra College.

Accounting
Administrative Professional
Agriculture
Animal Science
Apparel Design & Production
Applied Art & Design
(a) Graphic Design Concentration
(b) Illustration Concentration
(c) Multimedia Concentration
Automotive Technology:
(a) Air Conditioning & Body Electrical
(b) Alignment & Brake
(c) Automatic Transmission
(d) Emission & Driveability Tune-up
(e) Automotive Engine Machining
(f) Master Automotive Technician
(g) Power Train
Business Entrepreneurship
Business, General
Computer Information Systems:
(a) Computer Essentials
(b) Microsoft Office Specialist—Core Level
(c) Microsoft Office Specialist—Expert Level
(d) Online Business
(e) PC Care
(f) Web Page Editor
(g) Web Site Production
Computer Integrated Electronics:
(a) Linear Electronics
(b) Personal Computer Technician
Design Drafting:
(a) CAD Environment Management
(b) Drafting Essentials
Early Childhood Education Associate Teacher
Library Science:
(a) Library Media Technician
Photography:
(a) Alternative Processes in Photography
(b) Color Photography
(c) Digital Imaging
(d) Landscape Photography
(e) Narrative Photography
(f) Photographic Processes
(g) Portrait Photography
Small Business
Welding Technology:
(a) Gas Metal Arc Welding
(b) Gas Tungsten Arc Welding
(c) Metal Fabricator and Designer
(d) Shielded Metal Arc Welding

SKILLS CERTIFICATES
A Skills Certificate is an acknowledgement by Sierra College that the student has attained a specified set of competencies within a vocational education program, either in preparation to enter the field or upgrade of skills required for continued employment. Skills Certificates require demonstration of a specified set of competencies and require less than 18 units. To obtain a Skills Certificate from Sierra College, all courses required for the certificate must be completed with grades of “C” or better and at least 50% of the required coursework must be completed at Sierra College.

Computer Information Systems:
(a) Computer Essentials
(b) Microsoft Office Specialist—Core Level
(c) Microsoft Office Specialist—Expert Level
(d) Online Business
(e) PC Care
(f) Web Page Editor
(g) Web Site Production
Computer Integrated Electronics:
(a) Linear Electronics
(b) Personal Computer Technician
Design Drafting:
(a) CAD Environment Management
(b) Drafting Essentials
Early Childhood Education Associate Teacher
Library Science:
(a) Library Media Technician
Photography:
(a) Alternative Processes in Photography
(b) Color Photography
(c) Digital Imaging
(d) Landscape Photography
(e) Narrative Photography
(f) Photographic Processes
(g) Portrait Photography
Small Business
Welding Technology:
(a) Gas Metal Arc Welding
(b) Gas Tungsten Arc Welding
(c) Metal Fabricator and Designer
(d) Shielded Metal Arc Welding
### Transfer Courses to CSU System

**California State University Baccalaureate Level Course List 2006-2007**

#### Administration of Justice
28, 50, 52, 53, 54, 55, 56, 57, 58, 62, 63, 66, 67, 70, 72, 73, 74, 75, 95*, 300

#### Agriculture
28, 70, 95*, 120, 198, 200, 203, 204, 205, 210, 211, 215, 216, 221, 225, 300

#### Anthropology
1, 1L, 2, 4, 5, 7, 9, 10, 27, 28, 300

#### Applied Art & Design
10, 12, 20, 28, 30, 50, 52, 53, 54, 55, 60, 61, 62, 65, 66, 67, 70, 71, 72A, 72B, 75, 76, 80, 81A, 81B, 83, 85, 86, 90, 91, 92, 94, 95*, 99

#### Art

#### Astronomy
2, 5, 10, 11, 14, 25, 28, 300

#### Automotive Technology
28, 59, 60, 60C, 61, 62A, 62B, 63, 64, 66A, 66B, 68A, 68B, 69, 71A, 75, 79, 80, 81, 82, 95*, 300

#### Biological Sciences
1, 2, 3, 4, 5, 6, 7A, 7B, 10, 11, 13A, 13B, 14, 15, 16A through Z, 20, 22, 28, 30, 33, 35, 36, 44, 55, 56, 56L, 95*, 300

#### Business
1, 2, 3, 9, 19, 20, 28, 48, 49, 85, 86, 90, 95*, 100, 102, 112, 120, 121, 122, 123, 124, 140, 300

#### Chemistry
1A, 1B, 1X, 1Y, 2A, 2B, 2X, 3A, 3B, 3X, 5Y, 5, 10, 11, 12A, 12B, 28

#### Communication Studies
1, 2, 3, 5, 7, 8, 10, 12, 15, 20, 28, 30, 31A, 31B, 95*, 300

#### Computer Information Systems
5, 15, 20, 28, 30, 37, 40, 45, 50, 60, 67, 70, 80, 87, 90, 95*, 100, 105, 115, 120, 127, 137, 140, 150, 300

#### Computer Integrated Electronics
1, 4, 8, 10, 14, 20, 24, 25, 26, 28, 30, 40, 44, 54, 60, 70, 80, 90, 95*, 150, 300

#### Computer Science
10, 12, 13, 26, 27, 28, 39, 46, 50, 52, 54, 55, 57, 59, 62, 63, 64, 65, 66, 67, 68, 95*, 150, 300

#### Computer Service Technology
25, 40, 45, 50, 55, 60, 95*, 150

#### Construction Technology—Cabinet
1, 2, 3, 4, 5, 9, 22, 23, 24, 28, 35, 36, 95*, 300

#### Construction Technology—Residential
28, 35, 42, 44, 45, 46, 47, 48, 52, 60, 62, 80, 82, 95*, 300

#### Deaf Studies
1, 2, 3, 4, 5, 6, 7, 8, 9A, 9B, 28, 95*, 300

#### Design Drafting
8, 9, 10, 11, 12, 20, 28, 35A, 35B, 39, 40, 64, 65, 90, 95*, 300

#### Drama
10A, 10B, 11, 12, 13, 14, 15, 16A, 16B, 17, 19A, 19B, 20, 28, 300

#### Earth Science
10, 10L, 14, 15, 15L, 16D, 28, 300

#### Economics
1A, 1B, 28, 300

#### Education
7, 10, 28, 95*

#### Engineering
10, 17, 17L, 23, 28, 35, 45, 150

#### English
1A, 1B, 1C, 2, 7, 11, 12, 19, 20, 21, 24, 25, 26, 27, 28, 29, 30A, 30B, 32, 33, 34, 35, 37, 38, 40, 42, 43, 44, 45, 46A, 46B, 47A, 47B, 48, 300

#### English as a Second Language
30W, 40L, 40W

#### Environmental Horticulture
2, 28, 34, 35A, 35B, 36, 38, 39, 40, 47, 51, 95*, 136, 186

#### Family & Consumer Sciences
2, 28, 300

#### Fashion Design & Merchandising
1, 2, 3, 4A, 4B, 5, 6, 7, 8, 12, 28, 95*

#### Fire Technology
1, 3, 4, 5, 7, 8, 10, 28, 41, 50, 73, 74, 75, 95*, 150, 151, 152, 154, 155, 157, 159, 160, 163, 164 (maximum 30 units of Fire Tec. courses excluding 95)

#### Forestry
1, 2A through P, 5, 14, 17, 24, 28, 38, 39, 41, 45, 46, 95*, 300

#### French
1, 2, 3, 4, 28, 300

#### Geography
1, 1L, 2, 3, 4, 4L, 5, 11, 12, 14, 15, 16, 28, 85, 90, 91A, 91B, 95*, 300

#### Geology
1, 1L, 2, 3, 4, 4L, 6, 16G, 28, 50, 51A through G, 52F, 53F, 91A, 95*, 300

#### German
1, 2, 3, 4, 28
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<td>Human Development &amp; Family</td>
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<td>Nursing, Vocational</td>
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<td>Nutrition &amp; Food Science</td>
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<td>Personal Development</td>
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<td>Psychology</td>
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*Total of all Internship courses (any course numbered 95 and Personal Development 94) to be credited should not exceed 16 units.
### Transferable Courses to UC System

#### UNIVERSITY OF CALIFORNIA TRANSFER COURSE AGREEMENT 2006-2007

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<th>Course Area</th>
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<tr>
<td>Administration of Justice</td>
<td>50, 55, 58</td>
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<tr>
<td>Agriculture</td>
<td>28**, 120, 198, 200, 205, 215, 221, 225, 300**</td>
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<tr>
<td>Anthropology</td>
<td>1, 1L*, 2, 4, 5, 7, 9, 27, 28**, 300** (1L must be taken with 1)</td>
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<tr>
<td>Applied Art &amp; Design</td>
<td>12, 28**, 70, 75</td>
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<td>Astronomy</td>
<td>2, 5, 10, 11, 14, 25, 28**, 300**</td>
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<td>Biological Sciences</td>
<td>1, 2 or 22, 3 or 33, 4 or 44, 5*, 6*, 7A* and 7B*, 10*, 11*, 14, 15, 20**, 28**, 30, 35, 55*, 56*, 56L, 300** (maximum credit, 2 courses from 5, 6, 7AB and 55), (7A &amp; 7B must both be completed; 7A &amp; 7B combined, equivalent to 5), (maximum credit, 1 course from 10, 11 and 56/56L; no credit for 11 or 56/56L if taken after 1)</td>
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<tr>
<td>Business</td>
<td>1*, 2*, 3*, 20, 48, 49 (1, 2 and 3 combined maximum credit 6 units)</td>
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<tr>
<td>Chemistry</td>
<td>1A*, 1B*, 2A*, 2B*, 3A* and 3B*, 5, 10*, 11*, 12A, 12B, 28** (maximum credit, 1 series from 1AB and 2AB), (3A &amp; 3B must both be completed; maximum credit, 2 units for 3A, 3 units for 3B; 3A &amp; 3B combined equivalent to 1A), (no credit for 10 or 11 after 1A, 2A, or 3AB)</td>
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<tr>
<td>Communication Studies</td>
<td>1*, 2, 3, 5*, 7, 10, 12, 15 (maximum credit, 1 course from 1 and 5)</td>
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<td>Computer Science</td>
<td>10, 12, 13, 26, 28**, 39, 46, 54, 66, 67, 300**</td>
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<td>Deaf Studies</td>
<td>1, 2, 3, 4, 5, 28**, 300**</td>
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<td>Drama</td>
<td>10A, 10B, 11, 12, 13, 14, 15, 16A, 16B, 17, 19A, 19B, 20, 28**, 300**</td>
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<tr>
<td>Earth Science</td>
<td>10, 10L*, 14, 15, 15L, 28**, 300** (10L must be taken with 10)</td>
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<tr>
<td>Economics</td>
<td>1A, 1B, 28**, 300**</td>
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<td>Engineering</td>
<td>10, 17, 17L, 23, 28**, 35, 45</td>
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<tr>
<td>English</td>
<td>1A, 1B, 1C, 2, 19*, 20, 21, 24, 25, 26, 27, 28**, 29, 30A, 30B, 32, 33, 34, 35, 37*, 38*, 40, 42, 43, 46A, 46B, 47A, 48, 300** (no credit for 19 if taken after 20 or 21), (maximum credit, 1 course from 37 and 38)</td>
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<td>English as a Second Language</td>
<td>40W</td>
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<td>Environmental Horticulture</td>
<td>2, 35A*, 35B*, 36, 136 (maximum credit, 1 course from 35A and 35B)</td>
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<td>Forestry</td>
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<td>French</td>
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<tr>
<td>Geography</td>
<td>1, 1L*, 2, 3, 4, 4L, 5, 28** (1L must be taken with 1)</td>
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<tr>
<td>Geology</td>
<td>1, 1L, 2, 3, 3L, 4, 28**, 300**</td>
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</table>

*See explanation of unit limitations as noted within disciplines above.

**Transfer credit for these courses is given only after review of the course outline by the enrolling U.C. campus.
A. Communication in the English Language and Critical Thinking (One course each from areas 1, 2 and 3)

1. Oral Communication: Business 85; Communication Studies 1, 2, 3, 5.
   Units: 3

2. Written Communication: English 1A; English as a Second Language 40W.
   Units: 3

3. Critical Thinking: English 1B, 1C, 11; History 35; Philosophy 4.
   Units: 3

B. Physical Universe and Its Life Forms (Minimum of one course in each of areas 1, 2 and 3; one laboratory component required from either area 1 or 2). (Laboratory courses are underlined)

1. Physical Science: Agriculture 221; Astronomy 2, 2/14, 5, 5/14, 10, 10/14, 11, 25; Chemistry 1A, 1B, 2A, 2B, 3A, 3B, 10, 11; Computer Integrated Electronics 1; Earth Science 10, 10/10L, 14, 15, 15/15L; Geography 1, 1/1L, 4, 4/4L; Geology 1, 1/1L, 3, 3/3L, 4, 4L; Interdisciplinary 1*, 11; Physics 2A, 2B, 4A, 4B, 7B, 10, 11.
   Units: 3–4

2. Life Science: Agriculture 200, 211; Anthropology 1, 1/1L, 10; Biological Sciences 1, 2, 3, 4, 5, 6, 7A & 7B**, 10, 11, 14, 15, 22, 33, 35, 36, 44, 55, 56, 56/56L; Environmental Horticulture 2; Interdisciplinary 1*; Psychology 40, 40/40L.
   Units: 3–4

   Units: 3

C. Arts, Literature, Philosophy and Foreign Languages (Minimum of one course in each of areas 1 and 2 and representing a reasonable distribution among the disciplines)

1. Arts: Applied Art & Design 12, 60; Art 1A, 1B, 1C, 1D, 1E, 1F, 1G, 4A, 4B, 5A, 5B, 6A, 6B, 7A, 8A, 9A, 10, 11, 12A, 17, 19, 40A, 80; Communication Studies 12; Drama 10A, 13; English 37, 3B, 40, 42; Humanities 1, 2, 3; Music 2A, 6A, 10, 11, 12A, 12B, 46, 47, 4B, 50, 52, 54; Photography 10, 60A, 65.
   Units: 9

D. Social, Political and Economic Institutions and Behavior, Historical Background (Minimum of one course in each of areas 1 and 2 and representing a reasonable distribution among the disciplines)

1. Administration of Justice 50; Agriculture 198, 215; Anthropology 2, 4, 5, 7, 9, 27; Business 49; Communication Studies 7, 8, 10, 15; Economics 1A, 1B; Geography 2, 3, 5; History 4A, 4B, 17A, 17B, 19A, 19B, 20, 21, 22, 23, 24, 27, 30, 51; Human Development & Family 1, 4, 21, 22, 60; Humanities 3; Interdisciplinary 1*, 8; Nutrition & Food Science 10; Political Science 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 15, 16, 27; Psychology 1, 2, 3, 5, 6, 10, 12, 27, 30, 50, 60; Social Science 10, 13, 20, 25, 30, 35; Sociology 1, 2, 4; Women & Gender Studies 1.
   Units: 3–6

2. U.S. History, Constitution and American Ideals requirement is met by A, B, C, or D below:
   A. Two courses from History 17A, 17B, Political Science 1, 2.
   B. History 27 and Political Science 1.
   C. History 17A and History 20.
   D. History 17B and History 27.
   Units: 6

E. Lifelong Understanding and Self-Development (Minimum of 3 units required, of which only one unit may be P.E. activity)

Biological Sciences 6, 55; Family & Consumer Sciences 2; Health Education 2; Human Development & Family 1, 21, 22, 60; Interdisciplinary 1*, 5, 6; Natural Resources 10; Nutrition & Food Science 4, 10, 12, 13; Personal Development 1; Physical Education 4, 83, 84; Physical Education Activity (1 unit maximum) 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 24, 25, 26, 27, 36, 39, 40, 42, 43, 44, 51, 53, 54, 55, 56A, 56B, 57, 66, 70, 71, 72, 73, 74, 75, 76, 77, 79, 87, 93, 94, 200, 210; Psychology 1, 6, 8, 10, 12, 27, 30, 50; Sociology 4.
   Units: 3

MINIMUM GENERAL EDUCATION UNITS (in Lower Division)

Additional 9 units in upper division (advanced courses) at University

Minimum General Education Units (in BA/BS degree)

* Interdisciplinary 1 may be applied to any one Area: B, C, D, or E.
** Students must complete the series for CSU General Education Certification.
*** Each CSU has its own pattern for these requirements. See a Sierra College counselor for specific campus information.

NOTES:
1. Grades of C or better required in each course fulfilling areas A1, A2, A3 and B3.
2. CSU Sacramento requires: A foreign language and G.P.A. of 2.0 in General Education courses (except as noted above).
3. CSU Sacramento recommends that 42 units of lower division General Education courses be completed before transfer.
IGETC – Intersegmental
GENERAL EDUCATION TRANSFER CURRICULUM CSU AND UC 2006-2007

1. **ENGLISH COMMUNICATION** (CSU: 9 semester units, one course each from areas A, B, & C) (UC: 6 semester units, one course each from areas A & B)
   - A. English Composition: English 1A
   - B. Critical Thinking-English Composition: English 1B, 1C
   - C. Oral Communication: Communication Studies **1**, 2, 3, **5** (University of California transfer students do not have to fulfill this area; California State University transfers must.)
   - Units: 6–9

2. **MATHEMATICAL CONCEPTS AND QUANTITATIVE REASONING** (1 course, 3 semester units)
   - Mathematics **12, 13, 15, **16A, **16B, 18, 20, **29, **30, **31, **33, **42
   - Or: Advanced Placement (AP) exams that community college faculty recognize as equivalent to approved IGETC courses.
   - Units: 3

3. **ARTS AND HUMANITIES** (At least 3 courses, 9 semester units. At least one must be from Arts and one from Humanities.)
   - A. Arts: Art 1A, 1B, 1C, 1D, 1E, 1F, 1G, 10, **11, 80; Drama 13; English 42; Music 2, 6A, 9A, **10, 11, 12A, 12B; Photography **10
   - B. Humanities: Communication Studies 10; Deaf Studies 3, 4, 5; English 24, 25, 26, 27, 29, 30A, 30B, 32, 33, 34, 35, **37, **38, 40, 43, 46A, 46B, 47A, 48; French 3, 4; German 3, 4; History 4A, 4B, 17A, 17B, 19A, 19B, 20, 21, 22, 23, 24, 27, 30, 51; Humanities 1, 2, 3, 10, 15, 20, 21; Philosophy 2, 6, 10, 13, 15, 20, 21, 27, 50, 65; Spanish 3, 4.
   - Units: 9

4. **SOCIAL AND BEHAVIORAL SCIENCES** (At least 3 courses, 9 semester units. Courses from at least two disciplines.)
   - Administration of Justice 50; Agriculture 19B, 215; Anthropology 2, 4, 27; Business 49; Communication Studies 7, 15; Economics 1A, 1B; Geography 2, 3, 5; History 4A, 4B, 17A, 17B, 19A, 19B, 20, 21, 22, 23, 24, 27, 30, 51; Human Development & Family 1, 4, *21; Interdisciplinary 1; Political Science 1, 2, 3, 4, 7, 8, 9, 12, 16, 27; Psychology 1, 2, 3, 4, 5, 6, *10, 12, 27; Social Science 10, 13, 20, 25, 30, 35; Sociology 1, 2; Women & Gender Studies 1.
   - Units: 9

5. **PHYSICAL AND BIOLOGICAL SCIENCES** (At least 2 courses, 7-9 semester units. One Physical Science course and one Biological Science course.) Must include one laboratory course which must be a minimum of at least 4 semester units. Laboratory courses are underlined.
   - A. Physical Science: Astronomy 2/11, 2/12, 2/14, 5, 5/11, 5/14, 10/11, 10/14, 10/25, Chemistry **1A, **1B, **2A, **2B, **3A/3B, **10, **11; Earth Science 10, **10/10L, 14, 15, 15/15L, Geography 1, **1/1L, 4/4L; Geology 1/1L, 3/3L, 4; Physics **2A, **2B, **4A, **4B, **4C, **7, **10, **11.
   - B. Biological Science: Agriculture **200; Anthropology 1, **1/1L, Biological Sciences 1, **2, **3, **4, **5, **6, **7A/7B, **10, **11, 14, 15, **22, **33, **44, **55, **56, **56/56L; Environmental Horticulture 2; Psychology 40, 40/40L.
   - Units: 7–9

6. **LANGUAGES OTHER THAN ENGLISH** (Proficiency) (University of California requirement. Not required of California State University transfers.) (UC transfers may fulfill this requirement by completing A, B, C, or D below)
   - A. Completion of one of the following courses: Deaf Studies 1, 2, 3, 4; French 1, 2, 3, 4; German 1, 2, 3, 4; Italian 1, 2; Japanese 1, 2; Spanish 1, 2, 3, 4.
   - B. Completion of two years of the same foreign language in high school with grades of “C” or better.
   - C. Equivalent proficiency demonstrated by a minimum score of 550 on College Board SAT II tests in languages other than English, or a score of 3, 4, or 5 on any foreign language College Board Advanced Placement Examination.
   - D. Completion of two years of formal schooling at the sixth grade level or higher in an institution where the language of instruction is not English with grades of “C” or better.
   - Units: 0–4

UNITED STATES HISTORY, CONSTITUTION and AMERICAN IDEALS (6 semester units/2 courses)
CSU graduation requirement (not part of IGETC). Courses used to meet the U.S. History, Constitution and American Ideals requirement cannot also be used in IGETC for the areas of “Arts and Humanities” and/or “Social and Behavioral Sciences” above.
   - California State University transfers may fulfill this requirement by completing A, B, C or D below:
     - (A) Two courses from History 17A, History 17B, Political Science 1
     - (B) History 27 and Political Science 1
     - (C) History 17A and History 20
     - (D) History 17B and History 27
   - Units: 6

NOTES:
1. Students should consult with Counselors to determine the most appropriate General Education patterns for their intended majors and transfer institutions.
2. To be eligible for IGETC certification a student must have completed most of the transfer units at one or more California community college(s).
3. Courses taken as preparation for a major will also satisfy the corresponding portion of the IGETC requirements.
4. Each course used to fulfill IGETC requirements must be completed with a minimum grade of “C” or better.
5. Advanced placement exams may be used to satisfy all areas of IGETC except for the critical thinking-English composition and oral communication requirements. IGETC policy is to accept a score of 3 or higher to clear one course.
*Indicates that courses are cross-referenced under two departments and can be credited only once.
**Indicates that course credit may be limited. Please consult page 48 of the catalog and the Counseling Office for additional information.
The California Articulation Number (CAN) System is a statewide numbering system independent from course numbers assigned by local colleges. A CAN number signals that participating California colleges and universities have determined that courses offered by other campuses are equivalent in content and scope to courses offered on their own campuses, regardless of their unique titles or local identifying numbers. Thus, if a course bears a CAN number, students on one campus can be assured that it will be accepted in lieu of the comparable CAN course noted in the catalog or schedule of another campus.

The CAN numbering system is useful for students attending more than one community college and is applied to many of the transferable, lower division courses students need as preparation for their intended major. Because these course requirements may change, however and because courses are continually being redefined, qualified for or deleted from the CAN database, students should always check with their counselor, transfer center director, or the articulation officer to determine how CAN-designated courses fit into their educational plans for transfer.

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UNDERSTANDING COURSE DESCRIPTIONS
The courses described in this catalog may not be offered every term or every year. Check the Schedule of Classes for the current term’s course offerings. Course outlines for all courses are on file in the Office of Educational Programs and Services.

COURSE NUMBERING SYSTEM
The following numbering system is in effect:
0-299 Degree credit courses (includes courses with letter designations), may be accepted by the University of California system and the California State Universities
300-399 Degree credit courses in selected topics, transferable to the California State Universities and in some instances to the University of California system
400-449 Degree credit courses in selected topics, generally not transferable to four-year institutions
500-599 Non-Degree credit remedial courses (limited to 30 units) generally not transferable to four-year institutions. See a counselor for limitations.
600-799 Non-Degree credit
800-899 Non-Credit courses

SELECTED TOPICS AND INDEPENDENT STUDY COURSES
300 SELECTED TOPICS:
Units: .5-4 Transfer: CSU
The courses of study will cover topics relevant to the particular disciplines in which they are offered. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when topic is different from previously completed course.

400 SELECTED TOPICS:
Units: .5-4 Non-Transfer
The courses of study will cover topics relevant to the particular disciplines in which they are offered. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a
discipline only when the topic is different from previously completed course.

28 INDEPENDENT STUDY:
Units: 1-3    Transfer: CSU/UC*

Hours To Complete Course: (3 hours per week per unit)
Students may enroll in a maximum of three units per instructor per semester. Independent study courses may be taken four times for credit per discipline.

Objectives: These courses are designed for students interested in furthering their knowledge, at an independent study level, in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects.

Arrangements: A student may enroll by (1) requesting a Sierra College Independent Study Project from the appropriate Division Office; (2) contacting the appropriate professor for approval; (3) submitting the completed Independent Study Project form to the Division Dean for approval and issuance of a course code number; (4) submitting the approved Independent Study Project form to a campus Admissions & Records Office.

*Transfer credit for these courses is given only after review of the course by the enrolling U.C. campus.

TRANSFER STATUS DESIGNATION
The transfer status of a course is indicated below the course title. If a course is transferable, the designator “Transfer:” appears. “Transfer: CSU” indicates that the course credit transfers to all of the California State University campuses. “Transfer: UC” indicates that the course credit transfers to all of the University of California campuses. “Transfer: CSU/UC” indicates that the course credit transfers to all of the CSU and UC campuses. If an * appears after either CSU* or UC*, transferability of the units is limited. For further information, contact a Counselor.

COURSE PREREQUISITES, COREQUISITES, AND ADVISORIES
Sierra College strives to guide students into courses in which they will have the greatest chance for academic success. The following are the definitions for prerequisites, corequisites and advisory preparation:

“Prerequisite” means a condition of enrollment that students are required to meet in order to demonstrate current readiness for enrollment in a course or educational program.
Accounting  
(SEE BUSINESS)

Administration of Justice

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara  
DIVISION OFFICE: B 3  
FACULTY COORDINATOR: vacant  
liaison counselors: E. Dickson, V. Rogers, C. West

The Administration of Justice program offers three areas of concentration. There are five core courses everyone must complete. Two additional courses must be selected from any of the three concentrations available. Courses are available in Law Enforcement, specializing in police activities including effective patrol services to the public. Courts, specializing in responsibilities to the public through the trial system. Corrections, where the deviant member of society is subjected to society's effort to change the deviant behavior. Courses will continue to be developed and modified to conform to the needs expressed by the public in each of the three areas of concentration.

TRANSFER MAJOR REQUIREMENTS in Administration of Justice are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Administration of Justice are qualified are law enforcement officer, retail security, corrections, and pre-law.

A.A. and A.S. degrees can be earned in Administration of Justice. The A.A./A.S. requires completion of the five courses. In addition, the degree requires 6 units within the areas of specialization listed. Courses used to satisfy Sierra's General Education requirements may not be used to meet the 21 unit major requirement. Students planning to pursue a B.A. in the Administration of Justice program are encouraged to consult the catalog of the college to which they plan to transfer.

administration of justice—
A.A. OR A.S. DEGREE
Law Enforcement Concentration
The Law Enforcement curriculum prepares students for a career as a peace officer. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUiRED COURSEs UNiTS
 supplementation
adm.jus. 50 Introduction to Administration of Justice 3
adm.jus. 54 Introduction to Investigation 3
adm.jus. 55 Criminal Law 3
adm.jus. 56 Introduction to Evidence 3
adm.jus. 58 Community & Human Relations 3

PLUS 6 ADDITIONAL UNITS FROM:
adm.jus. 52 Criminal Procedures 3
adm.jus. 53 Police Field Operations 3
adm.jus. 57 Juvenile Law & Procedure 3
adm.jus. 60 Defensive Tactics 1
adm.jus. 61A Firearms Familiarization 2
adm.jus. 61B Advanced Firearms 2
adm.jus. 61C Firearms: Semi-automatics 2
adm.jus. 61D Firearms Instructor 2
adm.jus. 70 Substantive Law 3
adm.jus. 72 Illegal Drugs—Identification & Investigation 3
adm.jus. 73 Writing for Criminal Justice 3
adm.jus. 74 Computer Use in Criminal Justice 3
adm.jus. 75 Values & Ethics in Criminal Justice 3

TOTAL UNiTS ReQuiReD: 21

administration of justice—
A.A. OR A.S. DEGREE
Courts Concentration
The Courts Concentration curriculum prepares students for positions in the judicial system. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUiRED COURSEs UNiTS
adm.jus. 50 Introduction to Administration of Justice 3
adm.jus. 54 Introduction to Investigation 3
adm.jus. 55 Criminal Law 3
adm.jus. 56 Introduction to Evidence 3
adm.jus. 58 Community & Human Relations 3
adm.jus. 57 Juvenile Law & Procedure 3
adm.jus. 62 Introduction to Corrections 3
adm.jus. 70 Substantive Law 3
adm.jus. 72 Illegal Drugs—Identification & Investigation 3
adm.jus. 73 Writing for Criminal Justice 3
adm.jus. 74 Computer Use in Criminal Justice 3
adm.jus. 75 Values & Ethics in Criminal Justice 3

PLUS 6 ADDITIONAL UNITS FROM:
adm.jus. 52 Criminal Procedures 3
adm.jus. 57 Juvenile Law & Procedure 3
adm.jus. 62 Introduction to Corrections 3
adm.jus. 70 Substantive Law 3
adm.jus. 72 Illegal Drugs—Identification & Investigation 3
adm.jus. 73 Writing for Criminal Justice 3
adm.jus. 74 Computer Use in Criminal Justice 3
adm.jus. 75 Values & Ethics in Criminal Justice 3

TOTAL UNiTS ReQuiReD: 21

administration of justice—
A.A. OR A.S. DEGREE
Corrections Concentration
The Corrections Concentration curriculum prepares students for careers in corrections, probation and parole. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUiRED COURSEs UNiTS
adm.jus. 50 Introduction to Administration of Justice 3
adm.jus. 54 Introduction to Investigation 3
adm.jus. 57 Juvenile Law & Procedure 3
adm.jus. 62 Introduction to Corrections 3
adm.jus. 70 Substantive Law 3
adm.jus. 72 Illegal Drugs—Identification & Investigation 3
adm.jus. 73 Writing for Criminal Justice 3
adm.jus. 74 Computer Use in Criminal Justice 3
adm.jus. 75 Values & Ethics in Criminal Justice 3
ADM.JUS. 55 CRIMINAL LAW .............................. 3
ADM.JUS. 56 Introduction to Evidence .................... 3
ADM.JUS. 58 Community & Human Relations ............... 3

PLUS 6 ADDITIONAL UNITS FROM:
ADM.JUS. 52 Criminal Procedures ........................... 3
ADM.JUS. 57 Juvenile Law & Procedure .................... 3
ADM.JUS. 60 Defensive Tactics ............................... 1
ADM.JUS. 61A Firearms Familiarization ..................... 2
ADM.JUS. 61B Advanced Firearms ......................... 2
ADM.JUS. 61C Firearms: Semi-automatics ................. 2
ADM. JUS. 61D Firearms InstructOR2
ADM.JUS. 62 Introduction to Corrections .................. 3
ADM.JUS. 63 Correctional Casework .......................... 3
ADM.JUS. 66 Institutional Corrections ....................... 3
ADM.JUS. 67 Managing the Adult Offender ................. 3
ADM.JUS. 70 Substantive Law ............................... 3
ADM.JUS. 72 Illegal Drugs—Identification & Investigation 3
ADM.JUS. 73 Writing for Criminal Justice .................. 3
ADM.JUS. 74 Computer Use in Criminal Justice .......... 3
ADM.JUS. 75 Values & Ethics in Criminal Justice ........... 3

TOTAL UNITS REQUIRED: 21

ADMINISTRATION OF JUSTICE COURSES

ADM.JUS. 28 INDEPENDENT STUDY ............................
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ADM.JUS. 50 INTRODUCTION TO ADMINISTRATION OF JUSTICE
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Exploration of the history and philosophical roots of the U.S. justice system; in-depth study of the system and its subsystems with emphasis on the total environment in which they operate; roles and role expectations of professionals as perceived from within and outside of the system; study of theories of crime, punishment, rehabilitation; exploration of research methodology of the discipline; analysis of the system interrelationship with society, punishments and incarceration alternatives. (CAN AJ 2)

ADM.JUS. 52 CRIMINAL PROCEDURES
Units: 3 Transfer: CSU
Hours: 3 lecture
Comprehensive examination of the origin, development, philosophy and legal basis of criminal procedures in California; procedural statutes, case law, constitutional law and judicial rules governing pre-arrest, arrest, custody, crime charging, motions; applicable rules of discovery and evidence; California grand jury system; pretrial court procedures; adult and juvenile court procedures; verdict, sentencing and the appellate process.

ADM.JUS. 53 POLICE FIELD OPERATIONS
Units: 3 Transfer: CSU
Hours: 3 lecture
History and development of patrol philosophy; field activities including patrol, complaints, requests for services, field interviews, searches, arrests, traffic problems, disturbances and other community or criminal incidents.

ADM.JUS. 54 INTRODUCTION TO INVESTIGATION
Units: 3 Transfer: CSU
Hours: 3 lecture
Fundamentals of investigation; crime scene searches and recording; collection and preservation of evidence; sources of information; surveillance; interview and interrogation; follow-up investigation; resources; and case preparation. (CAN AJ 8)

ADM.JUS. 55 CRIMINAL LAW
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Historical development, philosophy of law, and constitutional provisions; definitions, classifications of crimes and their applications to the system of administration of justice; legal research, review of case law, methodology, and concepts of law as a social force. Explores concepts of crimes against persons, property, and the state in social, religious, and historical contexts. (CAN AJ 4)

ADM.JUS. 56 INTRODUCTION TO EVIDENCE
Units: 3 Transfer: CSU
Hours: 3 lecture
Origin, development, philosophy and legal basis of evidence; types of evidence; ways of presenting evidence; judicial decisions and statutory rules of evidence governing the admissibility of testimony, writings, materials and objects at a criminal trial; constitutional and procedural considerations affecting searches, seizures, admissions, confessions and methods of identification. (CAN AJ 6)
ADM.JUS. 57 JUVENILE LAW AND PROCEDURE
Units: 3 Transfer: CSU
Hours: 3 lecture
Organization, functions and jurisdiction of juvenile agencies; the processing and detention of juveniles; techniques of handling juvenile offenders and victims; prevention and suppression of delinquency; diagnosis and referral; community resources; law and court procedures.

ADM.JUS. 58 COMMUNITY AND HUMAN RELATIONS
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
In-depth survey of the relationship between the criminal justice system and the community; causal and symptomatic aspects of community misunderstanding, lack of cooperation and mistrust; the concept that community relations develop through a continuing process of interaction between the criminal justice practitioner and members of the public. Methods for understanding how such a relationship is developed, maintained and changed; major cultural groups in California.

ADM.JUS. 60 DEFENSIVE TACTICS
Units: 1
Hours: 2 activity
Protection against persons armed with dangerous and deadly weapons; demonstrations and drill in a limited number of holds and come alongs; restraint of prisoners and the mentally ill; fundamental use of the baton.

ADM.JUS. 61A FIREARMS FAMILIARIZATION
Units: 2
Hours: 3 (1.5 lecture, 1.5 laboratory)
Introductory course covering history of firearms, types and selection of weapons, ammunition and auxiliary equipment, firearm nomenclature, principles of safe shooting, weapon safety, maintenance and care, legal and moral aspects of weapon usage for both law enforcement and non-law enforcement, and development of individual shooting skills and safety. Qualifying at the firing range with a handgun and shotgun. Safety fee.

ADM.JUS. 61B ADVANCED FIREARMS
Units: 2
Prerequisite: Completion of Adm.Jus. 61A or 601 or 602, or completion of Basic Police Academy Course certified by California P.O.S.T.
Hours: 3 (1.5 lecture, 1.5 laboratory)
An advanced course further developing skills and theory introduced in Adm.Jus. 61A, with practical applications in varied complex settings. Emphasis on further study and practice of functional testing of firearms, sight alignment adjustments, and self-evaluation of shooting performance. Development of additional skills and knowledge necessary to teach firearm safety and techniques to enhance shooting skills. Safety fee.

ADM.JUS. 61C FIREARMS: SEMI-AUTOMATICS
Units: 2
Hours: 3 (1.5 lecture, 1.5 laboratory)
Practical semi-automatic course. Includes history and evolution of semi-automatics, types and uses, nomenclature, ammunition, marksmanship techniques, malfunctions, safety, and development of individual shooting skills. Safety fee required.

ADM.JUS. 61D FIREARMS INSTRUCTOR
Units: 2
Prerequisite: Successful completion of AJ 61A, 61B and 61C; or completion of AJ 61B and completion of a California Commission on Peace Officer Standards and Training (POST) certified Police Academy
Hours: 3 (2 lecture, 1 laboratory)
Knowledge and skills to train others in firearm safety, marksmanship and range program development. Includes fundamentals of marksmanship, curriculum development, firearms safety, range management, handgun/shotgun theory and nomenclature, developing qualification courses and diagnosing shooting problems through practical shooting exercises. Firearms Instructor certificate issued for those achieving 80% on the written examination and range qualifications.

ADM.JUS. 62 INTRODUCTION TO CORRECTIONS
Units: 3 Transfer: CSU
Hours: 3 lecture
A survey of the field of correctional science. Historical development, current concepts and practice; explanations of criminal behavior; functions and objectives of the criminal justice system concerned with institutional, probation, and parole processes as they modify the offender's behavior; survey of professional career opportunities in public and private agencies.

ADM.JUS. 63 CORRECTIONAL CASEWORK
Units: 3 Transfer: CSU
Hours: 3 lecture
Organizing and managing cases in the correctional field in order that all requirements are met in an effective manner; the casework method as a means of rehabilitating the incarcerated client will be discussed.

ADM.JUS. 66 INSTITUTIONAL CORRECTIONS
Units: 3 Transfer: CSU
Hours: 3 lecture
Historical and philosophical overview of federal, state, and local correctional systems. Differences in legal purpose, scope, operations, and design. Inmate and ward classification systems. Institutional programs, treatment and intervention modalities. Fiscal impacts, legislation, and societal attitudes affecting corrections. Custodial and ancillary career opportunities.
ADM.JUS. 67 MANAGING THE ADULT OFFENDER  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
A survey course emphasizing roles played between male and female adult offenders and the correctional employee. Inmate characteristics, subcultures, values, victimology, and gangs. Population management and statistics, institutional environment and discipline. Contemporary custody and treatment techniques.

ADM.JUS. 70 SUBSTANTIVE LAW  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
An in-depth study of penal and other codes which have an application to law enforcement. Includes misdemeanor and felony violations of the criminal statutes involving crimes against persons and property, public peace, dangerous weapons, narcotics, and vice violations.

ADM.JUS. 72 ILLEGAL DRUGS—IDENTIFICATION AND INVESTIGATION  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
Study of current drugs of abuse including identification, street terms, prices, methods of use, history, and recognizing persons under the influence. Current law and law enforcement trends including informants, search and seizure, courtroom testimony, and preparation of warrants.

ADM.JUS. 73 WRITING FOR CRIMINAL JUSTICE  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
Techniques of communicating facts, information, and ideas effectively in a simple, clear, and logical manner in the various types of criminal justice system reports; letters, memoranda, directives, and administrative reports; emphasis on criminal justice terminology, use of English, and organization of information. Practical experience in note taking and report writing; presentation of testimony in court.

ADM.JUS. 74 COMPUTER USE IN CRIMINAL JUSTICE  
Units: 3  
Transfer: CSU  
Hours: 4 (3 lecture, 1 laboratory)  
An introduction to system strategies and computer techniques used in law enforcement agencies. To include computer procedures, terminology, and program applications that produce crime support data. Data base applications found in law enforcement records, identification, CAD (Computer Assisted Dispatch Systems), statistics, and investigations.

ADM.JUS. 75 VALUES AND ETHICS IN CRIMINAL JUSTICE  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
Stresses the importance of ethical behavior and appropriate moral judgments necessary in the administration of justice field. Provides an understanding of values and integrity which must be displayed, and communication skills necessary to be an effective criminal justice practitioner.

ADM.JUS. 95 INTERNSHIP IN ADMINISTRATION OF JUSTICE  
Units: .5-4  
Transfer: CSU*  
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships  
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

ADM.JUS. 200 DOMESTIC VIOLENCE AND SEXUAL ASSAULT INTERVENTION  
Units: 3.5  
Hours: As scheduled for a total of 68 lecture hours  
Meets state certification requirements for domestic violence and sexual assault counselors. Covers historical, cultural, and psychological factors, precursors and effects, relationship of substance abuse, cultural diversity and role expectations, responsibilities and processes of medical, mental health, law enforcement, courts, and advocacy professionals. Covers crisis intervention and counseling techniques. Examines legal issues, mandated reporting, protective orders, victims’ rights and available resources.

ADM.JUS. 300 SELECTED TOPICS IN ADMINISTRATION OF JUSTICE  
Units: .5-4  
Transfer: CSU  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
ADM.JUS. 400 SELECTED TOPICS IN ADMINISTRATION OF JUSTICE
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

ADM.JUS. 600 P.C. 832: ARREST, COMMUNICATIONS, AND FIREARMS
Units: 2.5 (Non-Degree Credit)
Prerequisite: California Department of Justice certification of no disqualifying criminal history background preventing attendance
Hours: As scheduled for a total of 68 hours (44 lecture, 24 laboratory)
Meets requirements of California Penal Code Section 832 requiring individuals having Peace Officer powers to complete a training course prescribed by the Commission on Peace Officer Standards and Training (POST). Partially satisfies POST Level III Module training. Covers ethics, courts, community relations, laws of arrest, use of force, search and seizure, investigations, arrest and control methods, shooting principles, and range qualification. Safety fee required. (Credit/No Credit Grading) Not designed as a class for a permit to carry a concealed weapon.

ADM.JUS. 600C LEVEL III TRAINING
Units: 5 (Non-Degree Credit)
Prerequisite: Completion of Adm.Jus. 600 or Commission on Peace Officer Standards and Training certified P.C. 832 course, Level III—Part I
Hours: As scheduled for a total of 118 hours (78 lecture, 40 laboratory)
Satisfies Level III training requirements of the Commission on Peace Officer Standards and Training Level III module. Covers professionalism and ethics, law, report writing, vehicle operations, traffic, investigations, custody, arrest/control/baton, emergency care, chemical agents, information systems and cultural diversity issues. (Credit/No Credit Grading)

ADM.JUS. 501 LEVEL II MODULE
Units: 11.5 (Non-Degree Credit)
Prerequisite: Completion of Adm.Jus. 600 and 600C or Commission on Peace Officer Standards and Training Module III training standards and California Department of Justice certification of no disqualifying criminal history background preventing attendance
Hours: As scheduled for a total of 250 hours (192 lecture, 58 laboratory)
Satisfies training requirements of the Commission on Peace Officer Standards and Training Level II module. Covers community relations, victimology, criminal laws, search and seizure, evidence, report writing, enforcement techniques, investigations, arrest and control, firearms, persons with disabilities, hazardous materials awareness, and cultural diversity/discrimination. Safety fee required. (Credit/No Credit Grading)

ADM.JUS. 610 SPECIAL WEAPONS AND TACTICS—ADVANCED
Units: .5 (Non-Degree Credit)
Prerequisite: Completion of POST Basic Academy and employment as a Peace Officer assigned to a Special Weapons and Tactics team
Hours: As scheduled for a total of 24 hours (5 lecture, 19 laboratory)
Reality based training focusing on team challenges designed to test a SWAT team’s methods and capabilities. Emphasis on team movement, hostage rescues, advanced firearms usage, physical endurance, and team problem exercises. May be repeated for credit to meet legally mandated requirements. (Credit/No Credit Grading)

ADM.JUS. 620 BASICS OF NARRATIVE REPORT WRITING
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 8 lecture hours
Practical applications for improving narrative report writing skills. Emphasis on characteristics of a well-written report, principles of clear writing, proper grammar, organization and use of factual statements. May be taken twice for credit. (Credit/No Credit Grading)
ADMJUS. 630 PROFESSIONAL TRAINING FOR CRIMINAL JUSTICE PERSONNEL
Units: 5-3 (Non-Degree Credit)
Prerequisite: Appropriate federal and/or state certification entry standards or equivalent
Hours: As scheduled for 18 lecture hours per unit
Satisfies required standards for criminal justice personnel in areas of knowledge, techniques and perishable skills. Emphasis on laws of arrest; search and seizure; first aid and CPR; firearms; defensive tactics; illegal drugs, officers safety; civil liability; ethics; communication skills; interview and interrogations; investigations; crime scene processing; and report writing. May be repeated for credit to meet legally mandated education/training requirements. (Credit/No Credit Grading).

ADMJUS. 700A P.C. 832: ARREST & COMMUNICATIONS (NON-FIREARMS)
Units: 2 (Non-Degree Credit)
Hours: As scheduled for a total of 44 lecture hours
A 44-hour course satisfying the requirements of California Penal Code Section 832, requiring individuals having Peace Officer powers, who are not required to carry firearms, to receive a course of training as prescribed by the Commission on Peace Officer Standards and Training (POST). Ethics, courts, community relations, laws of arrest, use of force, search and seizure, investigations, and arrest and control methods. State required written examinations and an arrest and control skills examination. (Credit/No Credit Grading).

Agriculture
(ALSO SEE ENVIRONMENTAL HORTICULTURE)

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: M. Macfarlane
LIAISON COUNSELOR: B. Ruud

California is home to the largest food and agricultural economy in the nation. California’s farmers and ranchers have made this state the leader in agricultural production for more than 50 years. With 350 crops and an agricultural economy that exceeds $28 billion, the rest of the world looks to California to see what’s next in agriculture.

Students enrolled in the Agriculture courses receive both theoretical scientific knowledge and practical hands-on training—both very necessary to become successful in a career in agriculture. Students also learn about the complex interrelationships between agriculture, the environment, political and social forces and other sectors of the economy.

The Agriculture Department offers A.S. degrees and certificates in Agriculture, Animal Science, Equine Studies and Suburban Agriculture. All of the agriculture programs are designed to be student-centered and offer flexibility in course offerings allowing students to customize each degree based on their specific interests and career or educational goals.

TRANSFER AND MAJOR REQUIREMENTS in Agriculture are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

AGRICULTURE—
A.S. DEGREE OR CERTIFICATE (FORMERLY GENERAL AGRICULTURE)
This broad-based degree/certificate combines plant and soil science, animal science and business in a hands-on approach to prepare students for the workforce or for transfer to a four-year institution. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

REQUIRED CORE COURSES (14 UNITS)
Ag. 200 Introduction to Animal Science .......................... 4
Ag. 215 Introduction to Agricultural Business & Economics .... 3
Ag. 221 Introduction to Soil Science ................................. 3
Env.Hort 2 Horticultural Plant Science ....................... 4

PLUS 12 ADDITIONAL UNITS FROM ONE OR MORE OF THE FOLLOWING AREAS:

ANIMAL SCIENCE
Ag. 107 Animal Husbandry Skills ................................ 2
Ag. 144 Artificial Insemination of Cattle .......................... 2
Ag. 203 Animal Feeds and Nutrition ............................. 4
Ag. 204 Beef Science and Management ........................ 3
Ag. 205 Livestock Selection and Evaluation .................... 3
Ag. 210 Animal Health & Disease ................................. 3
Ag. 211 Anatomy and Physiology of Domestic Animals ....... 4
Ag. 225 Introduction to Equine Science and Management ..... 3

PLANT SCIENCE
Ag. 113 Pasture Management .................................... 1.5
Env.Hort 34 Plant Propagation .................................. 3
Env.Hort 35A OR Env.Hort 35B Plant Identification ........ 3
Env.Hort 52 Pest Management .................................. 3
Env.Hort 120 Introduction to Small Scale Horticulture Production 1

BUSINESS
Ag. 216 Agricultural Accounting ................................ 3
Ag. 228 Equine Business Management .......................... 3
Business 140 Small Business Management .................... 3

AGRICULTURE MECHANICS
Ag. 41/A.T. 55 Landscape & Garden Machine Maintenance.. 2
Ag. 42/A.T. 56 Four-Cycle Engine Maintenance & Repair .... 2
Ag. 70 Introduction to Mechanized Agriculture ............... 3
Ag. 171 Agriculture Welding—Gas ................................ 1.5
Ag. 172 Agriculture Welding—Arc .............................. 1.5
OTHER RELATED COURSES
Ag. 24 Agriculture and Land Use .................................. 1
Ag. 118 Ranch Property Development and Management .... 1.5
Ag. 120 Introduction to Wines ................................... 3
Ag. 198 Food, Society & the Environment ..................... 3
Nat.Res. 10 Conservation of Natural Resources .............. 3

TOTAL UNITS REQUIRED: 26
RECOMMENDED ELECTIVES: Math 13, Chem 2A & 2B or Chem 1A & 1B
Note: The courses listed above may or may not satisfy the Agriculture requirements at transfer colleges. See a counselor for specific transfer requirements.

ANIMAL SCIENCE—
A.S. DEGREE OR CERTIFICATE
( FORMERLY ANIMAL HUSBANDRY)

This degree/certificate is a science-based program stressing production and management of livestock. Students learn to integrate business, animal production, plant production and issues which face the animal protein production sector of the food production industry, preparing them for the workforce or for transfer to a four-year institution. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

REQUIRED CORE COURSES (19 UNITS)  UNITS
Ag. 107 Animal Husbandry Skills ................................. 2
Ag. 200 Introduction to Animal Science ....................... 4
Ag. 203 Animal Feeds and Nutrition ......................... 4
Ag. 210 Animal Health & Disease ............................. 3
Ag. 215 Introduction to Agricultural Business & Economics 3
Ag. 221 Introduction to Soil Science .......................... 3

PLUS 7 ADDITIONAL UNITS FROM THE FOLLOWING:
Ag. 24 Agriculture and Land Use .............................. 1
Ag. 95 Internship in Agriculture ............................... 1-3
Ag. 113 Pasture Management .................................. 1.5
Ag. 118 Ranch Property Development and Management .... 1.5
Ag. 144 Artificial Insemination of Cattle ...................... 2
Ag. 198 Food, Society & the Environment ..................... 3
Ag. 204 Beef Science and Management ...................... 3
Ag. 205 Livestock Selection and Evaluation .................. 3
Ag. 211 Anatomy and Physiology of Domestic Animals ...... 4
Ag. 225 Introduction to Equine Science and Management .... 3

TOTAL UNITS REQUIRED: 26
Note: The courses listed above may or may not satisfy the Agriculture requirements at transfer colleges. See a counselor for specific transfer requirements.

EQUINE STUDIES—
A.S. DEGREE OR CERTIFICATE

This program offers a comprehensive learning experience in the areas of equine science and management. It provides a foundation in basics of riding, training, care, and management preparing students for entry into the workforce or for transfer to a four-year institution. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

REQUIRED CORE COURSES (10.5 UNITS)  UNITS
Ag. 147 Horse Training II-Building a Foundation ................. 2
Ag. 225 Introduction to Equine Science and Management ...... 3
Ag. 228 Equine Business Management .......................... 3
Ag. 236 Introduction to Horse Training .......................... 2.5

PLUS 9 ADDITIONAL UNITS FROM THE FOLLOWING:
Ag. 28 Independent Study ......................................... 1-3
Ag. 95 Internship in Agriculture .................................. 1-3
Ag. 148 Horse Training III-Advanced Horsemanship ........... 2
Ag. 150 Broodmare Management ................................. 5
Ag. 151 Marketing Horses .......................................... 1
Ag. 153 Hoof Care for Horses ...................................... 5
Ag. 200 Introduction to Animal Science ........................... 4
Ag. 203 Animal Feeds and Nutrition .............................. 4
Ag. 210 Animal Health & Disease .................................. 3
Ag. 211 Anatomy and Physiology of Domestic Animals ........ 4
Ag. 235 Basic Equine Handling .................................... 2
Ag. 245 Competitive Equine Riding ............................... 2

PLUS 7 ADDITIONAL UNITS FROM THE FOLLOWING:
Ag. 70 Introduction to Mechanized Agriculture .................. 3
Ag. 107 Animal Husbandry Skills .................................. 2
Ag. 113 Pasture Management ..................................... 1.5
Ag. 118 Ranch Property Development and Management .... 1.5
Ag. 205 Livestock Selection and Evaluation ..................... 3
Ag. 215 Introduction to Agricultural Business & Economics .... 3
Ag. 216 Agricultural Accounting .................................. 3
Ag. 221 Introduction to Soil Science ............................. 3

TOTAL UNITS REQUIRED: 26.5
Note: The courses listed above may or may not satisfy the Agriculture requirements at transfer colleges. See a counselor for specific transfer requirements.
SUBURBAN AGRICULTURE—
A.S. DEGREE OR CERTIFICATE
(FORMERLY SUBURBAN AGRICULTURE—
GENERAL AGRICULTURE OPTION)
This program is designed for the small-scale agriculturist. It provides training in the hands-on skills as well as the management techniques that are necessary to be successful in small-scale agriculture production. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

REQUIRED COURSES
6 UNITS FROM ANY OF THE FOLLOWING
ANIMAL SCIENCE COURSES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Ag 107 Animal Husbandry Skills</td>
<td>2</td>
</tr>
<tr>
<td>Ag 144 Artificial Insemination of Cattle</td>
<td>2</td>
</tr>
<tr>
<td>Ag 200 Introduction to Animal Science</td>
<td>4</td>
</tr>
<tr>
<td>Ag 203 Animal Feeds and Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>Ag 204 Beef Science and Management</td>
<td>3</td>
</tr>
<tr>
<td>Ag 205 Livestock Selection and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>Ag 210 Animal Health &amp; Disease</td>
<td>3</td>
</tr>
<tr>
<td>Ag 225 Introduction to Equine Science and Management</td>
<td>3</td>
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</tbody>
</table>

9 UNITS FROM ANY OF THE FOLLOWING
PLANT/SOIL SCIENCE COURSES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Ag 113 Pasture Management</td>
<td>1.5</td>
</tr>
<tr>
<td>Ag 118 Ranch Property Development and Management</td>
<td>1.5</td>
</tr>
<tr>
<td>Ag 221 Introduction to Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 2 Horticultural Plant Science</td>
<td>4</td>
</tr>
<tr>
<td>Env.Hort 34 Plant Propagation</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 35A OR 35B Plant Identification</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 40 Arboriculture</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 120 Introduction to Small Scale Horticulture Production</td>
<td>1</td>
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</tbody>
</table>

6 UNITS FROM ANY OF THE FOLLOWING BUSINESS COURSES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag 215 Introduction to Agricultural Business &amp; Economics</td>
<td>3</td>
</tr>
<tr>
<td>Ag 216 Agricultural Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Ag 228 Equine Business Management</td>
<td>3</td>
</tr>
<tr>
<td>Business 140 Small Business Management</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 6 UNITS FROM ANY OF THE FOLLOWING AGRICULTURAL MECHANICS COURSES:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Ag 41/A.T. 55 Landscape and Garden Machine Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>Ag 42/A.T. 56 Four-Cycle Engine Maintenance and Repair</td>
<td>2</td>
</tr>
<tr>
<td>Ag 70 Farm Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>Ag 171 Agriculture Welding—Gas</td>
<td>1.5</td>
</tr>
<tr>
<td>Ag 172 Agriculture Welding—Arc</td>
<td>1.5</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 27
Note: The courses listed above may or may not satisfy the Agriculture requirements at transfer colleges. See a counselor for specific transfer requirements.

AGRICULTURE COURSES

AG. 24 AGRICULTURE AND LAND USE
Units: 1
Hours: As scheduled for a total of 18 lecture hours
Survey of California/Foothill/Mountain agriculture including land use issues, agricultural policy, water use, agricultural markets, and production practices. Field trip required.

AG. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. May be taken four times for credit. See Independent Study page in catalog.

AG. 41 LANDSCAPE AND GARDEN MACHINE MAINTENANCE (ALSO A.T. 55)
Units: 2
Hours: 4 (1 lecture, 3 laboratory)
Minor repair and replacement of engine parts and accessories on two-stroke cycle engines and machines, including chain saws and machinery normally used in grounds maintenance. Includes fuel and ignition systems, cooling systems, belt and chain drives, transmissions, blade sharpening, and preventive maintenance procedures and adjustments. May be taken three times for credit.

AG. 42 FOUR-CYCLE ENGINE MAINTENANCE AND REPAIR (ALSO A.T. 56)
Units: 2
Hours: 4 (1 lecture, 3 laboratory)
Minor and major maintenance and repair, tune-up and overhaul of four-cycle gasoline engines. Includes engines used for mowers, tillers, shredders, mulchers, pumps, sprayers, wood splitters, and garden tractors. May be taken twice for credit.

AG. 70 INTRODUCTION TO MECHANIZED AGRICULTURE
Units: 3 Transfer: CSU
Hours: 5 (1 lecture, 4 activity)
Basic mechanical skills in woodworking, cold metal, electricity, plumbing, concrete, and project construction as related to farm maintenance and repair. Hand and power tool use skills will be developed. Safety practices for all mechanical areas will be covered. (CAN AG 4)
AG. 95 INTERNSHIP IN AGRICULTURE
Units: .5-4 Transfer: CSU*
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships.
Designated for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of agricultural business, animal science, equine science, and veterinary science. Provides new on-the-job technical training under the direction of a worksite supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

AG. 107 ANIMAL HUSBANDRY SKILLS
Units: 2
Prerequisite: Completion of or concurrent enrollment in Ag. 7
Hours: 4 (1 lecture, 3 laboratory)
Development of husbandry skills necessary to process and treat livestock. Design and layout of livestock handling facilities is incorporated in the study of gathering, sorting, and restraining livestock for pregnancy testing, branding, earmarking, castrating, dehorning, docking, vaccinating, and implanting. May be taken three times for credit.

AG. 113 PASTURE MANAGEMENT
Units: 1.5
Hours: As scheduled for a total of 27 lecture hours (evening only)

AG. 118 RANCH PROPERTY DEVELOPMENT AND MANAGEMENT
Units: 1.5
Hours: As scheduled for a total of 45 hours (18 lecture, 27 laboratory)
Ranch property development that includes: site evaluation, soil evaluation, irrigation system selection, design and management, and pond construction and management. May be taken twice for credit.

AG. 120 INTRODUCTION TO WINES
Units: 3 Transfer: CSU/UC
Prerequisite: Students must be at least 21 years of age—California State Law
Advisory: Eligibility for English 1A or E.S.L. 40W strongly recommended
Hours: 3 lecture
An overview of world and California wine production and its role in history and distribution. Winemaking, sensory evaluation, wine selection and food will be explored. Materials fee will be assessed. Field trips required.

AG. 144 ARTIFICIAL INSEMINATION OF CATTLE
Units: 2
Hours: As scheduled for a total of 40 lecture hours
Students will learn to manage cattle to be bred by artificial insemination, handle bovine semen properly, and use rectal palpation techniques with bred cattle. All factors affecting the success of A.I. are covered. Students get a lot of closely supervised experience in breeding cattle. May be taken twice for credit.

AG. 147 HORSE TRAINING II—BUILDING A FOUNDATION
Units: 2
Hours: 4 (1 lecture, 3 laboratory) (evening only)
Explanations, demonstrations, and supervised practice in building a foundation on a started horse. Training of a green-broke horse as it is put into the bridle and trained for pleasure or show. Students are required to provide their own horse, tack, and trailer. May be taken twice for credit.

AG. 148 HORSE TRAINING III—ADVANCED HORSEMANSHIP
Units: 2
Prerequisite: Completion of Ag. 146 and Ag. 147
Hours: 4 (1 lecture, 3 laboratory) (evening only)
Explanation, demonstrations, and supervised practice in finishing a horse in any discipline. Emphasis will be placed on individual (situations) problems and goals. Students are required to provide their own horse, tack and trailer. May be taken three times for credit.

AG. 150 BROODMARE MANAGEMENT
Units: .5
Hours: As scheduled for a total of 9 lecture hours
Covers a month-by-month calendar of activities and management practices of the care of the broodmare and foal. Focus on reproductive physiology, modern breeding techniques, handling facilities, and health care. May be taken twice for credit.

AG. 151 MARKETING HORSES
Units: 1
Hours: As scheduled for a total of 18 lecture hours
Develops practical knowledge of marketing methods and skills in sale preparation practices.
AG. 153 HOOF CARE FOR HORSES
Units: .5
Hours: As scheduled for a total of 11 hours (8 lecture, 3 laboratory)
Normal structure and growth, hoof problems/diseases, and care of the hoof. Techniques to properly pull shoes, trim and balance a hoof, and evaluate a good trimming or shoeing. May be taken twice for credit.

AG. 171 AGRICULTURE WELDING—GAS
Units: 1.5
Hours: 3 (1 lecture, 2 laboratory) (evening only)
One class in a series designed for “weekend farmers.” Provides a usable skill to students with no welding background. May be taken twice for credit.

AG. 172 AGRICULTURE WELDING—ARC
Units: 1.5
Hours: 3 (1 lecture, 2 laboratory)(evening only)
One class in a series designed for “weekend farmers.” Provides a usable skill to students with no welding background. May be taken twice for credit.

AG. 198 FOOD, SOCIETY & THE ENVIRONMENT
Units: 3 Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W recommended
Hours: 3 lecture
Multiple perspectives and global connections between the environment, society and food production. Emphasis on agriculture’s central position between nature and society and its key role in humanity’s search for a productive and sustainable environment. Exploration of complex issues surrounding population growth, food, and the environment.

AG. 200 INTRODUCTION TO ANIMAL SCIENCE
Units: 4 Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
An overview of the principles of Animal Science and the interrelationships of domestic animals and mankind. The course introduces various disciplines, including cell function, genetics, anatomy and physiology, reproduction, nutrition, animal health, animal products and animal behavior.

AG. 203 ANIMAL FEEDS AND NUTRITION
(FORMERLY AG. 12)
Units: 4 Transfer: CSU
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 6 (3 lecture, 3 laboratory)
An introduction to the feeds and nutrition of animals including basic digestive system anatomy and physiology; composition and selection of feeds; characteristics of nutrients; principles of nutrition; nutrient requirements of non-ruminant and ruminant animals; and formulating diets to meet these requirements. (CAN AG 12)

AG. 204 BEEF SCIENCE AND MANAGEMENT
(FORMERLY AG. 8)
Units: 3 Transfer: CSU
Prerequisite: Completion of or concurrent enrollment in Ag. 200
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Overview of world and United States beef production. Evaluation of the structure of the beef industry (consumer, retailer, processor, feedlot, stocker, cow-calf and seedstock). Discussion of genetics, reproduction, nutrition, health, forage management, meat science and issues. (CAN AG 20)

AG. 205 LIVESTOCK SELECTION AND EVALUATION
(FORMERLY AG. 13)
Units: 3 Transfer: CSU/UC
Hours: 5 (2 lecture, 3 laboratory)
Detailed analysis of various visual and physical methods of appraising beef, sheep, swine and horses concerning functional and economic value. Written and oral summaries of evaluation will be learned. Specific reference made to performance data and factors determining carcass value.

AG. 210 ANIMAL HEALTH & DISEASE
Units: 3 Transfer: CSU
Prerequisite: Completion of AG. 200; or Bio.Sci. 1; or Bio.Sci. 11 and 33
Advisory: Eligibility for English 1A or E.S.L. 40W recommended
Hours: 3 lecture
Introduction to the study of disease processes in animals. Basic principles of disease organisms and the physiology of infection in domestic animals. Mechanisms by which the body combats infection will be discussed. Health management for prevention and treatment will be covered.
AG. 211 ANATOMY AND PHYSIOLOGY OF DOMESTIC ANIMALS
Units: 4  Transfer: CSU
Advisory: Completion of English 50 or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Comparative anatomy and normal functions of the principal organ systems of various domestic animals. Physiology will be applied as it pertains to animal nutrition, reproduction, health, disease and other aspects management. Fetal pigs, cats and other animal tissues may be dissected in laboratory.

AG. 215 INTRODUCTION TO AGRICULTURAL BUSINESS & ECONOMICS
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W recommended
Hours: 3 lecture
An overview of the role agriculture business plays in United States and world economies. Production and supply, marketing and demand, resource allocation, commodity pricing under perfect and imperfect competition will be some of the topics discussed as well as social and economic challenges of agriculture in urban and industrialized economies emphasizing California.

AG. 216 AGRICULTURAL ACCOUNTING (FORMERLY AG. 44)
Units: 3  Transfer: CSU
Advisory: Eligibility for English 1A or E.S.L. 40W recommended
Hours: 4 (2 lecture, 2 activity)
Study of the principles of agricultural accounting systems and types of records, their use and how to compute and use measures of earnings and cost of production to improve agribusiness efficiency. Also included are farm income tax, Social Security, and employee payroll records.

AG. 221 INTRODUCTION TO SOIL SCIENCE
Units: 2.5  Transfer: CSU/UC
Advisory: Completion of Ag. 235 or equivalent experience
Hours: As scheduled for a total of 72 hours (18 lecture, 54 activity)
A versatile approach to the basic principles involved in handling and training the green horse. Explanations, demonstrations, and supervised practice in ground work and starting a horse under saddle. Students are required to provide their own horse, tack and trailer unless other arrangements with the instructor have been made. May be taken three times for credit.
AG. 245 COMPETITIVE EQUINE RIDING
Units: 2
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 4 (1 lecture, 3 laboratory)
Basic instruction on equine showmanship and show preparation. Must provide your own horse and transportation or contact the instructor to make other arrangements. May be taken four times for credit. Field trips will be required.

AG. 300 SELECTED TOPICS IN AGRICULTURE
Units: .5-4 Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

AG. 400 SELECTED TOPICS IN AGRICULTURE
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Anatomy and Physiology
(SEE BIOLOGICAL SCIENCES)

Anthropology

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: M. Archer, J. Molina-Stidger
LIAISON COUNSELORS: R. Elliott, Reyes Ortega

Anthropology is the academic discipline concerned with the study of the biological and cultural development of mankind. The approach is comparative and holistic, focusing attention on the physical behavioral characteristics of humans, the range of their variations worldwide, and the constants which cut across all human activity. Anthropological studies include people throughout the world since the beginning of human life.

TRANSFER MAJOR REQUIREMENTS in Anthropology are available in the Counseling Center. Students should consult a counselor and appropriate college catalog for other transfer requirements. Catalogs of the California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Anthropology are qualified are archaeologist, anthropology instructor, environmental consultant, and state and national park anthropologist.

ANTHROPOLOGY COURSES

ANTHRO. 1 PHYSICAL ANTHROPOLOGY
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Broad introduction to the science of physical anthropology. Topics include: the field of anthropology, the scientific method, evolutionary theory, genetics and inheritance, human variation, biology and behavior of living primates, and fossil evidence of human evolution. (CAN ANTH 2)

ANTHRO. 1L PHYSICAL ANTHROPOLOGY LABORATORY
Units: 1 Transfer: CSU/UC*
Advisory: Completion of or concurrent enrollment in Anthro. 1 laboratory
Hours: 3 laboratory
Introductory laboratory course designed to investigate the science of biological anthropology. Areas of study include: the production and distribution of genetic variation, human osteology, human variation, comparative primate taxonomy, behavior and osteology, and fossil evidence for human evolution. Field trip required.
ANTHRO. 2 CULTURAL ANTHROPOLOGY
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Introduction to anthropological approaches in the study of human culture and diversity. Examines continuity and diversity in peoples’ lifestyles, social institutions, and cultural practices in a variety of global societies. Cultural phenomena studied include language, kinship, families, economics, politics, gender, religion and ritual. Explores the impact of social changes, such as colonization, decolonization, and globalization. (CAN ANTH 4)

ANTHRO. 4 NATIVE PEOPLES OF NORTH AMERICA
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Anthropological survey of the peoples and cultures of North America. Emphasizes native ecological adaptations, languages, social organizations, religion, mythologies and world view, and artistic representations. Critical examination of the impact of tribal nations on each other as well as the interactions with other groups of people. Examines the roots of present-day conditions of Native communities and the contributions of Native Americans to the cultures of the Americas. Field trips may be required.

ANTHRO. 5 INTRODUCTION TO ARCHAEOLOGY
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Survey of the history and theory of archaeology. Emphasis placed on techniques of archaeological data collection and analysis, cultural innovations and variations, reconstruction and interpretation of the past, and Cultural Resource Management work. Field trips may be required. (CAN ANTH 6)

ANTHRO. 7 NATIVE PEOPLES OF CALIFORNIA
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Study of the many cultures of the native inhabitants of California from the prehistoric period to the present time. Introduction to the diversity and complexity of aboriginal California. Includes environmental adaptation, material culture, social structure, ideology and response to change. Explores the impact of interactions with other groups of people as well as the contributions of Native Californians to the cultures of the Americas.

ANTHRO. 9 MAGIC, WITCHCRAFT, RITUAL, MYTH AND RELIGION
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Exploration of supernatural beliefs and practices around the world and over time. Cross-cultural survey and analysis of the forms and functions of myths, rituals, altered states of consciousness, spirit possession, messianic and cargo cults, witchcraft, and curing. Investigation of the relationship between medicine, science, myth, and supernatural belief systems in Western and non-Western societies.

ANTHRO. 10 INTRODUCTION TO FORENSIC ANTHROPOLOGY
Units: 3  Transfer: CSU
Hours: 3 lecture
Introduction to the forensic investigation of death. Emphasis on current techniques used for analysis of human skeletal remains, medico-legal techniques and the role of the anthropologist as an integral member of the investigation process.

ANTHRO. 27 GENDER, SEX AND CULTURE
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
A cross-cultural comparison of gender roles and sexuality viewed from biological, evolutionary and socio-cultural perspectives. Addresses contemporary, traditional and prehistoric societies. Explores the relationship between language and gender ideologies and practices in all societies.

ANTHRO. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ANTHRO. 300 SELECTED TOPICS IN ANTHROPOLOGY
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Applied Art and Design

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: T. Fillebrown, R. Gregg, P. Johnson, R. Snook
LIAISON COUNSELOR: K. Bray

Applied Art and Design is an academic discipline which focuses on the principles and practical applications of art, design, photography, computer graphics, imaging and animation. Study of the foundations of design, creative problem solving, portfolio development, and internship experiences, all prepare students for transfer programs and career opportunities. Within the A.A./A.S. degree or certificate options, students may concentrate in Graphic Design, Illustration, or Multimedia. Students who successfully complete the Applied Art and Design major can expect to find entry level employment in such areas as digital illustration, graphic design for print and internet, multimedia, animation, photographic retouching, and pre-press operation.

A.A. and A.S. degrees as well as certificates can be earned in the Applied Art and Design field. The certificate programs do not satisfy A.A./A.S. degree requirements but do qualify students for certificates in the field of study.

APPLIED ART & DESIGN—
A.A. OR A.S. DEGREE
ILLUSTRATION CONCENTRATION
Successful completion of the curriculum in Illustration qualifies students for entry level positions in graphic design, Web design, desktop publishing and packaging design. This option also prepares students for transfer to a four-year college program in Illustration. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

12 UNITS REQUIRED FROM THE FOLLOWING CORE:
Art/Des. 12 Visual Communication (also Comm.St. 12) .......... 3
Art/Des. 70 Introduction to Digital Art and Design .......... 3
Art/Des. 75 Introduction to Electronic Imaging (also Photo. 75) 3
Art 4A Drawing ........................................ 3
Art 6A Design OR
Art 6C Color Theory ........................................ 3

PLUS 9 UNITS REQUIRED FROM THE FOLLOWING:
Art/Des. 52 Publication Design I ................................ 4
Art/Des. 53 Publication Design II ................................ 3
Art/Des. 54 Typography ...................................... 3
Art/Des. 60 Graphic Design: Principles & Process .......... 3
Art/Des. 61 Computer Production for Graphic Design .... 3
Art/Des. 62 Graphic Computer Illustration ................. 3

PLUS 3 UNITS SELECTED FROM THE FOLLOWING, OR
UNUSED COURSES FROM PRECEDING REQUIREMENTS
(MAY INCLUDE ONE COURSE REPETITION):
Art/Des. 10 Career Perspectives in Digital Art .................. 3
Art/Des. 20 Portfolio Development and Presentation .......... 2
Art/Des. 28 Independent Study ................................ 5-3
Art/Des. 30 Photographing Works of Art (also Photo. 30) .... 5
Art/Des. 51 Design Laboratory .................................. 5
Art/Des. 65 Capturing Digital Images ................................ 1
Art/Des. 85 Web Design ...................................... 3
Art/Des. 86 Design for the Web .................................. 3
Art/Des. 90 Multimedia Production ................................. 4
Art/Des. 95 Internship ........................................... 5-3
Art/Des. 99 Digital Portfolio ..................................... 3
Art/Des. 100B Current Practices in Graphic Design .......... 5-3
Photo. 60A Elementary Photography OR
Photo. 80 Basic Color Photography OR
Photo. 81 Color Printing ........................................... 3

TOTAL UNITS REQUIRED: 24

APPLIED ART & DESIGN—
A.A. OR A.S. DEGREE
GRAPHIC DESIGN CONCENTRATION
Successful completion of the curriculum in Graphic Design qualifies students for entry level positions as digital illustrators for use in graphic design, advertising, and book and card illustration. This option also prepares students for transfer to a four-year college program in Illustration. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

12 UNITS REQUIRED FROM THE FOLLOWING CORE:
Art/Des. 12 Visual Communication (also Comm.St. 12) .......... 3
Art/Des. 70 Introduction to Digital Art and Design .......... 3
Art/Des. 75 Introduction to Electronic Imaging (also Photo. 75) 3
Art 4A Drawing ........................................ 3
Art 6A Design OR
Art 6C Color Theory ........................................ 3

PLUS 9 UNITS REQUIRED FROM THE FOLLOWING:
Art/Des. 55 Illustration (also Art 55) ............................ 3
Art/Des. 62 Graphic Computer Illustration ...................... 3
Art/Des. 71 Introduction to Digital Painting (also Art 71) OR
Art/Des. 72A Digital Painting-Intensive I AND ................. 3
Art/Des. 72B Digital Painting-Intensive II ....................... 3
Art/Des. 76 Advanced Projects in Electronic Imaging (also Photo. 76) 3
Art/Des. 85 Introduction to Three-Dimensional Modeling .... 3
Art 4B Drawing OR
Art 5A Figure Drawing OR
Art 54 Descriptive Drawing ....................................... 3

PLUS 3 UNITS SELECTED FROM THE FOLLOWING, OR
UNUSED COURSES FROM PRECEDING REQUIREMENTS
(MAY INCLUDE ONE COURSE REPETITION):
Art/Des. 10 Career Perspectives in Digital Art 3
Art/Des. 11 Portfolio Development & Presentation 3
Art/Des. 18 Independent Study 5
Art/Des. 19A 20th Century Art History 4
Art/Des. 28 Graphic Design Principles & Process 5
Art/Des. 30 Photography Works of Art (also Photo. 30) 5
Art/Des. 31 Design Laboratory 5
Art/Des. 32 Graphic Design Principles & Process 3
Art/Des. 34 Design for the Web 3
Art/Des. 35 Digital Animation 1
Art/Des. 36 Web Design 3
Art/Des. 37 Digital Portfolio 3
Art/Des. 38 Internet Foundation 3
Art/Des. 39A Multimedia Design 3
Art/Des. 40A Introduction to Digital Imaging 3
Art/Des. 41A Introduction to Multimedia Design 3
Art/Des. 42A Introduction to Digital Imaging 3

TOTAL UNITS REQUIRED: 24

APPLIED ART & DESIGN—
A.A. OR A.S. DEGREE
MULTIMEDIA CONCENTRATION

Successful completion of the curriculum in Multimedia qualifies students for entry level positions as interactive media designers, computer game designers, interface designers, animators, and on-line web designers. This option also prepares students for transfer to a four-year college program in Multimedia. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

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<thead>
<tr>
<th>COURSES</th>
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<tr>
<td>Art/Des. 12 Visual Communication (also Comm.St. 12)</td>
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<tr>
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<td>Art/Des. 75 Introduction to Electronic Imaging (also Photo. 75)</td>
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<td>Art 4A Drawing</td>
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<td>Art 6A Design OR</td>
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PLUS 9 UNITS REQUIRED FROM THE FOLLOWING:

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<th>COURSES</th>
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<tr>
<td>Art/Des. 80 Non-Linear Video Editing OR</td>
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<td>Art/Des. 81A Non-Linear Video Editing-Intensive I AND</td>
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<td>Art/Des. 81B Non-Linear Video Editing-Intensive II</td>
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<td>Art/Des. 83 Introduction to Three-Dimensional Modeling</td>
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<td>Art/Des. 86 Design for the Web</td>
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<td>Art/Des. 90 Multimedia Production</td>
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<td>Art/Des. 91 Multimedia-Intensive</td>
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<td>Art/Des. 92 Programming for Multimedia</td>
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<td>Art/Des. 94 Digital Animation</td>
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<tr>
<td>Comm.St. 31A Introduction to Video Production</td>
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<td>Art/Des. 28 Independent Study</td>
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<td>Art/Des. 30 Photographing Works of Art (also Photo. 30)</td>
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<tr>
<td>Art/Des. 51 Design Laboratory</td>
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APPLIED ART & DESIGN—
CERTIFICATE
GRAPHIC DESIGN CONCENTRATION

The certificate in Graphic Design qualifies students for entry level positions in graphic design, web design, desktop publishing, and packaging design. The certificate is designed to focus on providing specific vocational skills; and is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

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PLUS 12 UNITS REQUIRED FROM THE FOLLOWING:

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<tr>
<td>Art/Des. 52 Publication Design I</td>
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<td>Art/Des. 53 Publication Design II</td>
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<td>Art/Des. 54 Typography</td>
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<td>Art/Des. 60 Graphic Design: Principles &amp; Process</td>
<td>3</td>
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<tr>
<td>Art/Des. 61 Computer Production for Graphic Design</td>
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<td>Art/Des. 62 Graphic Computer Illustration</td>
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PLUS 8 UNITS SELECTED FROM THE FOLLOWING, OR
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<tr>
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<td>Art/Des. 28 Independent Study</td>
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<td>Art/Des. 30 Photographing Works of Art (also Photo. 30)</td>
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<tr>
<td>Art/Des. 51 Design Laboratory</td>
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Art/Des. 65 Capturing Digital Images .................................. 5  
Art/Des. 85 Web Design ................................................. 3  
Art/Des. 90 Multimedia Production .................................... 4  
Art/Des. 95 Internship .................................................. 5-3  
Art/Des. 99 Digital Portfolio ........................................... 3  
Art/Des. 100B Current Practices in Graphic Design ............... 5-3  
Photo. 60A Elementary Photography OR  
Photo. 80 Basic Color Photography OR  
Photo. 81 Color Printing ................................................. 2  
Photo. 78 Digital Photography ........................................... 3  
**TOTAL UNITS REQUIRED: 32**

### APPLIED ART & DESIGN—CERTIFICATE

#### ILLUSTRATION CONCENTRATION

The certificate in Illustration qualifies students for entry level positions as digital illustrators for use in graphic design, advertising, and book and card illustration. The certificate is designed to focus on providing specific vocational skills; and is not equivalent to an A.A. or A.S. degree.

#### REQUIRED COURSES

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<tr>
<td>Art/Des. 55 Illustration (also Art 55)</td>
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<td>Art/Des. 62 Graphic Computer Illustration</td>
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<tr>
<td>Art/Des. 71 Introduction to Digital Painting (also Art 71) OR Art/Des. 72A Digital Painting-Intensive I AND Art/Des. 72B Digital Painting-Intensive II</td>
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<td>Art/Des. 76 Advanced Projects in Electronic Imaging (also Photo. 76)</td>
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<td>Art 54 Descriptive Drawing</td>
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#### PLUS 8 UNITS SELECTED FROM THE FOLLOWING, OR UNUSED COURSES FROM PRECEDING REQUIREMENTS (MAY INCLUDE ONE COURSE REPEITION):

| Art/Des. 10 Career Perspectives in Digital Art | 3 |
| Art/Des. 20 Portfolio Development & Presentation | 2 |
| Art/Des. 28 Independent Study | 5-3 |
| Art/Des. 30 Photographing Works of Art (also Photo. 30) | 5 |
| Art/Des. 51 Design Laboratory | 5 |
| Art/Des. 60 Graphic Design: Principles & Process | 3 |
| Art/Des. 65 Capturing Digital Images | 1 |
| Art/Des. 85 Web Design | 3 |
| Art/Des. 95 Internship | 5-3 |
| Art/Des. 99 Digital Portfolio | |
| Art/Des. 100A Current Practices in Digital Imaging | 5-3 |
| Art 7A Painting: Oil OR | |
Art 5A Figure Drawing ........................................... 3
Business 122 Marketing In The Digital Age .................... 3
C.I.S. 127 Creating Web Pages ........................................... 3
C.I.S. 137 Managing a Successful Web Project ................. 3
C.S. 62 Introduction to HTML Programming .................... 3
C.S. 63 Introduction to E-Commerce Programming .......... 3
TOTAL UNITS REQUIRED: 32

APPLIED ART & DESIGN COURSES

ART/DES. 10 CAREER PERSPECTIVES IN DIGITAL ART
Units: 3 Transfer: CSU
Hours: 3 lecture
Designed to provide understanding of the field of digital art including graphic design, illustration, multimedia, and electronic imaging. Covers career paths and opportunities, day-to-day work activities, technical, artistic and business skills needed, client interaction, salary ranges, collaborative work requirements, educational preparation, and trends and projections in the field. Guest speakers and site visits included.

ART/DES. 12 VISUAL COMMUNICATION
(ALSO COMM.ST. 12)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of visual communication including design principles, aesthetics, visual perception, non-verbal messages, relationship to verbal communication, audience analysis and persuasion. Historical overview of visual media as well as current trends and technology.

ART/DES. 20 PORTFOLIO DEVELOPMENT
AND PRESENTATION
Units: 2 Transfer: CSU
Hours: 2 lecture
Function and use of the portfolio as a marketing device for artists and designers. Styles, materials, resources in portfolio design. Evaluation of professional goals and image building. Students will create and present a portfolio of their work as a final project. For advanced students.

ART/DES. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ART/DES. 30 PHOTOGRAPHING WORKS
OF ART (ALSO PHOTO. 30)
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 13 hours (7 lecture, 6 laboratory)
Methods and procedures involved in reproducing works of art into slides, prints or digital files for cataloging, portfolios, or publication. Covers equipment needed for both artificial and natural light situations, camera considerations, proper exposure, film types, and presentation of copy work for both two dimensional and three dimensional art. Students must furnish film, processing, storage and presentation materials. May be taken twice for credit.

ART/DES. 50 INTRODUCTION TO THE
MACINTOSH COMPUTER
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 13 hours (7 lecture, 6 laboratory)
Introduction to the Macintosh computer hardware and operating system. Basic skills including menu bar, opening and saving files, navigating, mouse and keyboard use. Memory, storage, and resolutions issues. Icons, terminology and common acronyms. Overview of peripherals and software used in art and design.

ART/DES. 51 DESIGN LABORATORY
Units: .5-1 Corequisite: Concurrent enrollment in an Applied Art & Design course
Hours: 1.5 laboratory per half unit
Computer laboratory experience concentrating on the creation of digital images. Provides laboratory access and assistance with course projects requiring the use of computers and peripheral lab equipment. May be taken four times for credit.

ART/DES. 52 PUBLICATION DESIGN I
Units: 4 Transfer: CSU
Hours: 6 (2 lecture, 4 activity)
Introductory course in use of computer for page layout and composition. Critical application of basic computer operating principles. Emphasis on publication design and the use of type and layout as key elements in graphic communication. Covers importing text and graphics, arranging publication pages, and producing camera ready artwork for reproduction. May be taken two times for credit.
ART/DES. 53 PUBLICATION DESIGN II
Units: 3 Transfer: CSU
Prerequisite: Completion of Art/Des. 52 or equivalent
Hours: 4 (2 lecture, 2 activity)
Page layout for developing and producing high-quality multipage documents. Emphasis on publication design, production, typography, graphics, and pre-press. Includes research and application of effective magazine layout concepts, cover design, grid theory, graphics, text elements and printing standards and processes. May be taken two times for credit.

ART/DES. 54 TYPOGRAPHY
Units: 3 Transfer: CSU
Prerequisite: Completion of Art/Des. 60
Hours: 4 (2 lecture, 2 activity)
Typographic principles and form, effects of type on the style and communication in print and screen. Includes exposure to historical and contemporary graphics and typographic design, conceptualizing, developing and refining typographical forms, methods for analyzing typographic usage, proper application of type in a variety of print and screen environments, hand drawn and computer generated typed forms. May be taken twice for credit.

ART/DES. 55 ILLUSTRATION (ALSO ART 55)
Units: 3 Transfer: CSU
Prerequisite: Completion of Art 4A
Hours: 4 (2 lecture, 2 activity)
Professional practices of illustration, including concept development, communication of ideas, identification and use of appropriate styles and techniques, time management, and presentation of finished artwork. May be taken twice for credit.

ART/DES. 60 GRAPHIC DESIGN: PRINCIPLES AND PROCESS
Units: 3 Transfer: CSU
Advisory: Completion of Art 4A or Art 6A
Hours: 4 (2 lecture, 2 activity)
Introductory course emphasizing concept development, fundamental principles of design and design solutions. Exploration of materials and techniques for visualizing and presenting ideas, analyzing and critiquing design and combining diverse elements in effective layouts from concept through final critique. May be taken two times for credit.

ART/DES. 61 COMPUTER PRODUCTION FOR GRAPHIC DESIGN
Units: 3 Transfer: CSU
Advisory: Completion of Art/Des. 60 and Art/Des. 70 recommended
Hours: 5 (1.5 lecture, 3.5 activity)
Use of the computer to design and produce full color graphics and print materials, including industry standards and procedures for working with art directors, service bureaus, and printers in pre-press operations. Refinement of problem solving skills in graphic design through projects and critique. May be taken three times for credit.

ART/DES. 62 GRAPHIC COMPUTER ILLUSTRATION
Units: 3 Transfer: CSU
Advisory: Completion of Art/Des. 70 and Art 4A or 6A
Hours: 5 (2 lecture, 3 laboratory)
Computer illustration techniques for effective graphic communication. Creation of graphic illustrations for use in a wide range of media including print, multimedia, and World Wide Web. Emphasis on typography as a design element, required industry standards for reproduction of art work, and appropriate file formats and standards for integration of design elements into other electronic media. May be taken two times for credit.

ART/DES. 65 CAPTURING DIGITAL IMAGES
Units: 1 Transfer: CSU
Advisory: Completion of Art/Des. 50 recommended
Hours: As scheduled for a total of 26 hours (14 lecture, 12 laboratory)
Digitizing images for use in various computer applications, including desktop publishing; paint and draw programs; digital photography; multimedia authoring; web image preparation and photojournalism. Introduction to flatbed and scanning, information on hardware and software.

ART/DES. 66 BUSINESS PRACTICES FOR THE APPLIED ARTS
Units: 1 Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours
Fundamental business practices for graphic designers, multimedia and illustration artists, photographers and other creative service providers. Initial client contact to final billing process. Basic elements of running a small studio including overview of license, taxes and bookkeeping. Production of invoices, purchase orders, job sheets and organizational forms. Discussion of business ethics in the arts, copyright protection, and working relationships with clients and suppliers.
ART/DES. 67 INTRODUCTION TO ARC GIS (ALSO GEOG. 91A, GEOLOGY 91A, C.I.S. 87)
Units: 1 Transfer: CSU
Advisory: Completion of Geog. 90 or equivalent recommended
Hours: As scheduled for a total of 18 lecture hours
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases, and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields.

ART/DES. 70 INTRODUCTION TO DIGITAL ART AND DESIGN
Units: 3 Transfer: CSU/UC
Hours: 4 (2 lecture, 2 activity)
Introduction to fundamental concepts and techniques of art and design on the computer. Includes basic computer skills, digital image capture, image manipulation, drawing, page layout, and preparation of images for print, web or multimedia. Students develop creative projects using current graphics software. May be taken twice for credit.

ART/DES. 70A DIGITAL PAINTING—INTENSIVE I
Units: 1.5 Transfer: CSU
Advisory: Completion of Art/Des. 70 and Art 4A or 6A recommended
Hours: As scheduled for a total of 36 hours (18 lecture, 18 laboratory)
A short-term, fast paced course in the basics of digital painting. Includes selecting paper textures, using paint and draw tools, modifying color palettes, using patterns and gradients, cloning, masking and basic image editing and effects.

ART/DES. 72B DIGITAL PAINTING—INTENSIVE II
Units: 1.5 Transfer: CSU
Advisory: Completion of Art/Des. 72A recommended
Hours: As scheduled for a total of 36 hours (18 lecture, 18 laboratory)
A short-term, fast paced course in digital painting. Advanced work including masking, building custom brushes, creating paper textures, working with floaters, using the image hose, working with shapes and paths, mapping gradations, capturing textures, customizing and modifying libraries, creating drop shadows, and combined image effects.

ART/DES. 75 INTRODUCTION TO ELECTRONIC IMAGING (ALSO PHOTO. 75)
Units: 3 Transfer: CSU/UC
Advisory: Completion of Art/Des. 70 recommended
Hours: 4 (2 lecture, 2 laboratory)
Introduction to the field of electronic imaging and image processing with computers. Critical analysis and operating principles in the acquisition, processing, synthesis and printing of the electronic image. Basic computer scanning, retouching methods, image manipulation and final printing and presentation of images. May be taken twice for credit.

ART/DES. 76 ADVANCED PROJECTS IN ELECTRONIC IMAGING (ALSO PHOTO. 76)
Units: 3 Transfer: CSU
Advisory: Completion of Art/Des. 75 and Photo. 60A, 80, or 81 recommended
Hours: 4 (2 lecture, 2 laboratory)
Advanced digital project development. Creating original images from a variety of input devices including scanning, digital cameras and CDs. Speed building in editing techniques. Use of various output methods appropriate for specific projects. Evaluations and critiques of completed projects. May be taken three times for credit.

ART/DES. 80 NON-LINEAR VIDEO EDITING
Units: 4 Transfer: CSU
Advisory: Completion of Art/Des. 75 recommended
Hours: 6 (2 lecture, 4 activity)
Non-linear video editing on the personal computer. Introduction to video capture, image and sound manipulation, basic editing techniques, including the use of transitions, animation of still clips, use of filters, creation of titles and credits and output as Quicktime movies and to VHS tape. May be taken three times for credit.
ART/DES. 81A NON-LINEAR VIDEO EDITING—INTENSİVE I  
Units: 1.5  
Transfer: CSU  
Hours: As scheduled for a total of 36 hours (18 lecture, 18 activity)  
A fast paced, short-term introduction to non-linear video editing on the personal computer. Includes importing video clips, image and sound manipulation, basic editing techniques, including the use of transitions and filters, creation of titles and credits.

ART/DES. 81B NON-LINEAR VIDEO EDITING—INTENSİVE II  
Units: 1.5  
Transfer: CSU  
Hours: As scheduled for a total of 36 hours (18 lecture, 18 activity)  
A fast paced, intermediate course in non-linear video editing. Includes video capture, image and sound manipulation, more advanced editing techniques, including animation of still clips, and modification of sound and images in other programs. Students will create original video projects for use in other applications or for export to VHS tape.

ART/DES. 83 INTRODUCTION TO THREE-DIMENSIONAL MODELING  
Units: 3  
Transfer: CSU  
Advisory: Completion of Art/Des. 70 and Art 4A recommended  
Hours: 6 (1.5 lecture, 4.5 laboratory)  
Three-dimensional modeling on the computer including construction of three-dimensional forms, use of surface textures, application of lighting effects, and animation of completed constructions. Students will create original projects including environments, objects, buttons, three-dimensional texts and animations for use in fine art, graphic design, multimedia and the World Wide Web. May be taken four times for credit.

ART/DES. 85 WEB DESIGN  
Units: 3  
Transfer: CSU  
Advisory: Completion of Art/Des. 71 or 75, and Art/Des. 12 or Art 6A recommended  
Hours: 5 (2 lecture, 1 activity, 2 laboratory)  
Introducing the dynamic world of web page design. Includes information on software available for assembling pages; technical and aesthetic design issues; use of banners, buttons, links, and the inclusion of animation on the web. Creation of web pages using multiple elements. On line exploration and critique of web sites. May be taken four times for credit.

ART/DES. 86 DESIGN FOR THE WEB  
Units: 3  
Transfer: CSU  
Prerequisite: Completion of Art/Des. 75 or Photo. 75  
Hours: 4 (2 lecture, 2 activity)  
Intermediate course in layout and design as applied to web site development. Includes design fundamentals including use of color, compositional arrangement and typography as well as technical skill development in image editing; creation of rollovers, animation and navigation elements, file optimization, slicing, and HTML setup. May be taken three times for credit.

ART/DES. 90 MULTIMEDIA PRODUCTION  
Units: 4  
Transfer: CSU  
Advisory: Completion of Art/Des. 75 recommended  
Hours: 6 (2 lecture, 4 activity)  
Introduction to interactive, multimedia authoring. Assembly of media elements including digital images, sound, and quicktime video into cross-platform projects. Use of multimedia tools, scripts, and animation. Stylistic concerns, content development, and copyright issues will be studied. Students will create original, interactive multimedia projects appropriate for CD ROM and World Wide Web presentation. May be taken four times for credit.

ART/DES. 91 MULTIMEDIA—INTENSİVE  
Units: 2  
Transfer: CSU  
Advisory: Completion of Art/Des. 71 or 75, and Art 6A or Art/Des. 12 or Comm.St. 12 recommended  
Hours: As scheduled for a total of 54 hours (18 lecture, 36 activity)  
Intensive introduction to interactive, multimedia authoring. Assemble media elements including digital images, sound, and quicktime video into cross-platform projects. Use of the score, paint window, and basic lingo scripts. Original interactive portfolio project created. May be taken twice for credit.

ART/DES. 92 PROGRAMMING FOR MULTIMEDIA  
Units: 3  
Transfer: CSU  
Prerequisite: Completion of Art/Des. 90  
Hours: 4 (2 lecture, 2 activity)  
Writing script for multimedia authoring including time based programs and event based interactivity. Introduction to basic script elements, writing structured code, using event handler methods, inputting and outputting data and publishing projects. Used in multimedia to create games, build customizable interfaces, develop forms, work with changing data and controlling sound and video. May be taken four times for credit.
ART/DES. 94 DIGITAL ANIMATION
Units: 4 Transfer: CSU
Advisory: Completion of Art/Des. 70 and Art 4A
Hours: 6 (3 lecture, 3 laboratory)
Study of animation structure, concepts, development of storyboard, creation of graphics, use of timeline, and stage. Explores techniques of cell animation, straight ahead drawing to music, rotoscoping, digital tweening techniques, camera moves, angles and cuts, lip synch, acquisition, creation and manipulation of sound effects. Projects published for use on the Web, CD Rom and video. May be taken two times for credit.

ART/DES. 95 INTERNSHIP IN APPLIED ART AND DESIGN
Units: .5-4 Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

ART/DES. 99 DIGITAL PORTFOLIO
Units: 3 Transfer: CSU
Advisory: Completion of Art/Des. 65 and 70; Art/Des. 62 or 71 or 75 recommended
Hours: 4 (2 lecture, 2 laboratory)
Function and use of a digital portfolio as a marketing device for artists and designers. Needs assessment, resources, styles, timeline, interface design, software tools, output media. Students will create and present a digital portfolio of their work as a final project. For advanced students in digital graphics. May be taken three times for credit.

ART/DES. 100A CURRENT PRACTICES IN DIGITAL IMAGING
Units: .5-3
Advisory: Completion of Photo. 75 recommended
Hours: As scheduled for a total of 9 lecture hours per .5 unit
Presentations and workshops in digital imaging offering advanced students and working professionals the opportunity for fast, intensive updates in software, hardware and design, and exploration of specific current issues facing the industry. May be taken four times for credit.

ART/DES. 100B CURRENT PRACTICES IN GRAPHIC DESIGN
Units: .5-3
Advisory: Completion of Art/Des. 61 or equivalent recommended
Hours: As scheduled for a total of 9 lecture hours per .5 unit
Presentations and workshops will offer advanced students in graphic design and working professionals the opportunity for fast, intensive updates in software, hardware and design, and exploration of specific issues facing the graphic design industry. May be taken four times for credit.

ART/DES. 100C CURRENT PRACTICES IN INTERACTIVE MEDIA
Units: .5-3
Advisory: Completion of Art/Des. 85 or 90 recommended
Hours: As scheduled for a total of 9 lecture hours per .5 unit
Presentations and workshops in interactive media will offer advanced students and working professionals the opportunity for fast, intensive updates in software, hardware and design, and exploration of specific issues currently facing the industry. May be taken four times for credit.

ART/DES. 100D CURRENT PRACTICES IN ANIMATION
Units: .5-3
Advisory: Completion of Art/Des. 90 or equivalent recommended
Hours: As scheduled for a total of 9 lecture hours per .5 unit
Presentations and workshops in animation will offer advanced students and working professionals the opportunity for fast, intensive updates in software, hardware and design, and exploration of specific issues currently facing the industry. May be taken four times for credit.

Art

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: C. Angleton, D. Brown, P. Johnson, J. Keating, C. O’Connor, M. Pacansky-Brock
LIAISON COUNSELORS: E. Dickson, V. Rogers

The faculty of the Art Department is committed to the objective of making the arts of the past and present available to the students through historical surveys and the studio experience. It is believed that this heritage of thought and skill, going beyond our immediate time and culture, will enrich the students’ lives, their personal view of their world, and their communication of ideas, through added knowledge and inter-cultural understanding.

TRANSFER MAJOR REQUIREMENTS in Art are available in the Counseling Center. Students should consult a
counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Art are qualified are professional artist, teacher, fine artist, and crafts artist.

**ART—A.A. DEGREE**

The A.A. program in Art is intended to prepare students for entry-level positions in the fine and applied art fields. The program seeks to provide breadth through basic requirements in two and three-dimensional studio and art history courses. Additional course work is selected by students toward specific career alternatives such as fine artist, graphic designer, crafts person, illustrator, or computer artist. Employment opportunities in these fields are highly dependent on the quality and breadth of one's artistic portfolio. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>6 UNITS FROM THE FOLLOWING:</td>
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</tr>
<tr>
<td>Art 1A History of Prehistoric through Gothic Art</td>
<td>3</td>
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<tr>
<td>Art 1B History of Renaissance to Mid-Nineteenth Century Art</td>
<td>3</td>
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<tr>
<td>Art 1C History of Modern to Contemporary Art</td>
<td>3</td>
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<tr>
<td>Art 1D History of Asian Art</td>
<td>3</td>
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<tr>
<td>Art 1E History of Women in Art</td>
<td>3</td>
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<tr>
<td>Art 1F Introduction to Islamic Art</td>
<td>3</td>
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<tr>
<td>Art 1G History of the Arts of Africa, the Americas, and Oceania</td>
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PLUS 6 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>Art 4A Drawing</td>
<td>3</td>
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<tr>
<td>Art 6A Design</td>
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PLUS 3 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>Art 12A Introduction to Sculpture</td>
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<tr>
<td>Art 17 Ceramic Sculpture Studio</td>
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<tr>
<td>Art 19 Figure Sculpture</td>
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PLUS 12 ADDITIONAL UNITS FROM OTHER COURSES LISTED ABOVE, OR SELECTED FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>Art 4B Drawing</td>
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<tr>
<td>Art 5A Figure Drawing</td>
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<tr>
<td>Art 5B Figure Drawing</td>
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<tr>
<td>Art 6C Color Theory</td>
<td>3</td>
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<tr>
<td>Art 7A Painting: Oil</td>
<td>3</td>
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<tr>
<td>Art 7B Painting: Oil</td>
<td>3</td>
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<tr>
<td>Art 8A Painting: WatercolorOR3</td>
<td>3</td>
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<tr>
<td>Art 8B Painting: WatercolorOR3</td>
<td>3</td>
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<tr>
<td>Art 9A Opaque Water Media</td>
<td>3</td>
</tr>
<tr>
<td>Art 9B Opaque Water Media</td>
<td>3</td>
</tr>
<tr>
<td>Art 9S Painting &amp; Drawing Studio AND/OR</td>
<td>3</td>
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<tr>
<td>Art 18S Ceramics Studio AND/OR</td>
<td>3</td>
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<tr>
<td>Art 19S Sculpture Studio</td>
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<tr>
<td>Art 10 Art Appreciation</td>
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<tr>
<td>Art 12B Sculpture</td>
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<tr>
<td>Art 18A Ceramics I</td>
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<td>Art 18B Ceramics II</td>
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<td>Art 20 Raku Ceramics</td>
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<td>Art 21 Primitive Ceramics</td>
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<td>Art 22 Creative Design in Metal</td>
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<td>Art 24 Advanced Metal Design</td>
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<td>Art 28 Independent Study</td>
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<td>Art 30 Creative Process in Children (also Hum.Dev. 30)</td>
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<td>Art 31 Mural Art</td>
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<td>Art 32 Introduction to Fiber Arts</td>
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<td>Art 33 Art Metal Casting</td>
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<td>Art 40A Printmaking</td>
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<td>Art 40B Printmaking</td>
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<td>Art 41 Jewelry Design</td>
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<td>Art 50 Art Gallery Operations</td>
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<td>Art 52 Portrait Drawing and Painting</td>
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<td>Art 54 Rendering</td>
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<td>Art 80 Issues in Contemporary Art</td>
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<td>Art/Des. 20 Portfolio Development and Presentation</td>
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<td>Art/Des. 30 Photographing Works of Art (also Photo. 30)</td>
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<td>Art/Des. 50 Introduction to the Macintosh Computer</td>
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<td>Art/Des. 52 Publication Design I</td>
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<td>Art/Des. 55 Illustration (also Art 55)</td>
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<td>Art/Des. 60 Graphic Design: Principles &amp; Process</td>
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<td>Art/Des. 61 Computer Production for Graphic Design</td>
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<td>Art/Des. 65 Capturing Digital Images</td>
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<td>Art/Des. 70 Introduction to Digital Art and Design</td>
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<td>Art/Des. 75 Introduction to Electronic Imaging (also Photo. 75)</td>
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<td>Art/Des. 90 Multimedia Production</td>
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<td>Photo. 60A Elementary Photography</td>
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<tr>
<td>Photo. 60B Intermediate Photography</td>
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</tbody>
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**TOTAL UNITS REQUIRED: 27**

(Student art work may be retained by the Department, at its discretion, for one year)

**ART COURSES**

**ART 1A HISTORY OF PREHISTORIC THROUGH GOTHIC ART**

*Units: 3 Transfer: CSU/UC*

*Hours: 3 lecture*

Study of architecture, sculpture and painting of the Ancient Near East and Europe from Prehistory through Middle Ages. (CAN ART 2) (With Art 1B, CAN ART SEQ_A)

**ART 1B HISTORY OF RENAISSANCE TO MID-NINETEENTH CENTURY ART**

*Units: 3 Transfer: CSU/UC*

*Hours: 3 lecture*

Study of painting, architecture, sculpture and graphic arts of European cultures from the Renaissance through mid-nineteenth century. (CAN ART 4) (With Art 1A, CAN ART SEQ_A)
ART 1C HISTORY OF MODERN TO CONTEMPORARY ART
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of the historical development of art and architecture in Europe and the United States from mid-nineteenth century to contemporary practice.

ART 1D HISTORY OF ASIAN ART
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of the painting, sculpture, architecture and other art forms of India, China, Japan, Korea, and Southeast Asia from prehistoric times to present.

ART 1E HISTORY OF WOMEN IN ART
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Women in the arts in world civilizations including their influence as artists and patrons as well as representations of women from Antiquity to the present.

ART 1F INTRODUCTION TO ISLAMIC ART
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Islamic art and architecture from Arabic, Persian and Indian cultures. Formation of Islamic art, history, and philosophy. Works of art from Muslim countries and regions. Comparison with art from other major Asian cultures such as Buddhism and Hinduism as well as European traditional art inspired by religion.

ART 1G HISTORY OF THE ARTS OF AFRICA, THE AMERICAS, AND OCEANIA
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of various art forms of the cultures of Africa, the Americas, and Oceania from prehistoric times to the present.

ART 4A DRAWING
Units: 3 Transfer: CSU/UC
Hours: 5 (2 lecture, 3 laboratory)
Introduction to drawing, including gesture and contour drawing; rendering of volumetric form showing light and shadow; description of forms in space; and basic principles of compositional arrangement. Instruction in the use of black and white drawing media will include pencil, charcoal, and ink. References to various historical and cultural styles and techniques. (CAN ART 8)

ART 4B DRAWING
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Art 4A
Hours: 5 (2 lecture, 3 laboratory)
Continued exploration of the various concerns of drawing, including gesture and contour drawing, rendering of volumetric form showing light and shadow, description of forms in space, and basic principles of compositional arrangement using color drawing media including pencils, pastels, and inks. Drawing will be studied with reference to various historical and cultural styles and techniques.

ART 5A FIGURE DRAWING
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Art 4A
Hours: 5 (2 lecture, 3 laboratory)
Drawing the human form using live models. Emphasis on the concepts of form in space, proportions, anatomical construction, dimensional composition. Development of self-expression and creativity through artwork employing the figure as the primary subject matter. Study of figurative art in historical and cultural contexts. Use of a wide variety of drawing materials to achieve various aesthetic effects.

ART 5B FIGURE DRAWING
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Art 5A
Hours: 5 (2 lecture, 3 laboratory)
Drawing the human form using live models. Continued concepts of form in space, proportions, anatomical construction, and dimensional composition. Development of self-expression and creativity through art work employing the figure as the primary subject matter. Study of figurative art in historical and cultural contexts. Use of a wide variety of drawing materials, including color media to achieve various aesthetic effects. Emphasis on completed compositions. May be taken three times for credit.

ART 6A DESIGN
Units: 3 Transfer: CSU/UC
Hours: 5 (2 lecture, 3 laboratory)
Study of the elements of space, line, texture, shape, value, and color; and the principles of composition including balance, movement, harmony, variety, dominance, proportion and economy in art and design. Elements and principles are studied with reference to various cultures and time periods. Students will translate theory into practice through studio projects in both two and three-dimensional design.
ART 6C COLOR THEORY
Units: 3 Transfer: CSU/UC
Advisory: Completion of Art 6A recommended
Hours: 5 (2 lecture, 3 laboratory)
Basic principles and properties of color. Theoretical study and direct studio projects of such colorists as Josef Albers and Johannes Itten. Study of the physics of light and color; physiology of color vision; psychological and compositional effects of color use; cultural interpretations and traditions; history of color theory and its impact on art and design. (CAN ART 22)

ART 7A PAINTING: OIL
Units: 3 Transfer: CSU/UC
Advisory: Completion of Art 4A recommended
Hours: 5 (2 lecture, 3 laboratory)
An introduction to the techniques of oil painting. Painting techniques explored in historical/cultural contexts, as well as student’s individual style and interest. Composition, colors, and sources of inspiration studied through class assignments. Students will be encouraged to develop self-expression and creativity. (CAN ART 10)

ART 7B PAINTING: OIL PAINTING
Units: 3 Transfer: CSU/UC
Advisory: Completion of Art 7A or equivalent recommended
Hours: 5 (2 lecture, 3 laboratory)
Continued in-depth study of oil painting techniques and processes, with emphasis on development of personal expression and style. May be taken twice for credit.

ART 8A PAINTING: WATERCOLOR
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Art 4A
Hours: 5 (2 lecture, 3 laboratory)
Introduction to the watercolor techniques as a transparent painting medium. Includes exploration of traditional and nontraditional watercolor methods, composition, color use, development of sources of personal inspiration, and historical traditions studied through lecture, reading and direct class painting assignments.

ART 8B PAINTING: WATERCOLOR
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Art 8A or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Designed for those who have already studied beginning watercolor. Continued in-depth study of techniques and processes of transparent watercolor. Emphasis on practice and improvement in painting techniques and development of personal expression and style. May be taken twice for credit.

ART 9A PAINTING: OPAQUE WATER MEDIA
Units: 3 Transfer: CSU/UC
Advisory: Completion of Art 4A recommended
Hours: 5 (2 lecture, 3 laboratory)
Introduction to techniques of acrylic, gouache, and other opaque water painting media, depending on student interest and individual class emphasis. Painting explored in historical context as well as student’s individual style and interest. Composition, color use, and sources of inspiration studied through class assignments.

ART 9B PAINTING: OPAQUE WATER MEDIA
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Art 9A or equivalent recommended
Hours: 5 (2 lecture, 3 laboratory)
In-depth study of opaque water painting techniques and processes with emphasis on development of personal expression and style. May be taken twice for credit.

ART 9S PAINTING, DRAWING AND PRINTMAKING STUDIO
Units: .5-4 Transfer: CSU
Corequisite: Concurrent enrollment in a studio course
Hours: As scheduled for a total of 18 hours activity per half unit
Individual assistance in concurrent course work, lab techniques and advanced critique. May be taken four times for credit. (Credit/No Credit Grading)

ART 10 ART APPRECIATION
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introductory course providing a basic understanding of art. Course topics include interpretation, developing a visual vocabulary, and an exploration of various media and techniques.

ART 11 HISTORY AND AESTHETICS OF PHOTOGRAPHY (ALSO PHOTO. 10)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Historical and thematic survey of photography as an art form and communication tool from its invention to the present. Explores various critical perspectives including aesthetic and design principles, influential themes, periods, and photographers. Investigates technical considerations, functions and photography’s role in the development of mass culture.
ART 12A INTRODUCTION TO SCULPTURE  
Units: 3  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
Introduction to basic sculpture technique, materials, and philosophy. Exploratory work in traditional and contemporary concepts which may deal with a variety of materials including wood, plaster, stone, plastics, and metal casting. (CAN ART 12)

ART 12B SCULPTURE  
Units: 3  
Transfer: CSU/UC  
Prerequisite: Completion of Art 12A  
Hours: 5 (2 lecture, 3 laboratory)  
Continued exploration of sculpture philosophy and materials with a greater emphasis toward development of personal direction and individual style. Students will be able to work with a variety of materials to create works of art. May be taken twice for credit.

ART 17 CERAMIC SCULPTURE STUDIO  
Units: 3  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
Exploration of various ceramic hand-forming methods with clay as a medium; cultural, traditional, and contemporary ceramics techniques will be explored through the development of three-dimensional projects. May be taken twice for credit.

ART 18A CERAMICS I  
(FORMERLY ART 18)  
Units: 3  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
Introduction to the ideas, techniques, history and tradition of the art and craft of ceramics. Ceramics will be explored through hand building, wheel throwing, decorating and glazing of ceramic works. May be taken twice for credit. (CAN ART 6)

ART 18B CERAMICS II  
Units: 3  
Transfer: CSU/UC  
Prerequisite: Completion of Art 18A or equivalent  
Hours: 5 (2 lecture, 3 laboratory)  
Course builds on techniques learned in Art 18A. Emphasis on use of the potter’s wheel. Glaze technology introduced. May be taken twice for credit.

ART 18S CERAMICS STUDIO  
Units: .5-4  
Transfer: CSU  
Corequisite: Concurrent enrollment in a studio course  
Hours: As scheduled for a total of 18 hours activity per half unit  
Individual assistance in concurrent course work, lab techniques and advanced critique. May be taken four times for credit. (Credit/No Credit Grading)

ART 19 FIGURE SCULPTURE  
Units: 3  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
Introduction to figure sculpture using the live model. Emphasis on understanding the human figure as it relates culturally to contemporary and traditional sculptural concepts. Students will be introduced to a variety of construction materials beginning with ceramics. More advanced students may explore other materials such as plaster, bronze, and stone. May be taken twice for credit.

ART 19S SCULPTURE STUDIO  
Units: .5-4  
Transfer: CSU  
Corequisite: Concurrent enrollment in a studio course  
Hours: As scheduled for a total of 18 hours activity per half unit  
Individual assistance in concurrent course work, lab techniques and advanced critique. May be taken four times for credit. (Credit/No Credit Grading)

ART 20 RAKU CERAMICS  
Units: 3  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
Introduction to Raku, a primitive ceramics process. Explores origins and cultural developments and their application to the contemporary world. Includes glaze chemistry, kiln construction, firing techniques, and design theory. May be taken twice for credit.

ART 21 PRIMITIVE CERAMICS  
Units: 3  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
Student exploration and digging of clays; preparing them for studio use; exploring primitive or ancient firing and decorating techniques, and firing with dung and wood. Field trips required. May be taken three times for credit.

ART 22 CREATIVE DESIGN IN METAL  
Units: 3  
Transfer: CSU  
Hours: 5 (2 lecture, 3 laboratory)  
Exploration of metal techniques, design principles, and material use for sculpture and functional and nonfunctional art forms. Welding (gas, arc, M.I.G. and T.I.G.), forming, bending, and blacksmithing techniques will be covered for ferrous and nonferrous metals. May be taken twice for credit.

ART 23 KILN CONSTRUCTION  
Units: 2  
Hours: 4 (1 lecture, 2 activity, 1 laboratory)  
Kiln construction, historical development of ceramic kilns, firing-theory and kiln building practice. May be taken twice for credit.
ART 24 ADVANCED ART METAL DESIGN
Units: 3  
Prerequisite: Completion of one semester of Art 22  
Hours: 5 (2 lecture, 3 laboratory)
Advanced exploration of metal techniques, design principles, and material use for sculpture and functional and nonfunctional art forms. Emphasis on development of a personal creative vision, furthering technical skills, and complex problem solving. Includes aluminum anodizing, ferrous and nonferrous metal machining, advanced welding techniques, advanced forming methods, and public outdoor art installation. May be taken two times for credit.

ART 28 INDEPENDENT STUDY
Units: 1-3  
Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at the independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ART 30 CREATIVE PROCESS IN CHILDREN (ALSO HUM.DEV. 30)
Units: 3  
Transfer: CSU
Hours: 4 (2 lecture, 2 activity)
Introduction to the aesthetic development and creative expression of children. Exploration of art methods, materials, creative process, and developmental stages. Studio projects will enable students to implement age-appropriate projects for early childhood education and school-age students.

ART 31 MURAL ART (FORMERLY ART 301)
Units: 3  
Transfer: CSU/UC
Advisory: Completion of Art 4A
Hours: 5 (2 lecture, 3 laboratory)
Designing, drawing and painting murals. Concentration on mural design and painting processes: research and development of themes, preparatory sketches and drawings of designs, development and transfer of the cartoons, and painting an actual mural. May be taken twice for credit.

ART 32 INTRODUCTION TO FIBER ARTS (FORMERLY ART 302)
Units: 3  
Transfer: CSU/UC
Advisory: Completion of Art 4A recommended
Hours: 5 (2 lecture, 3 laboratory)
Develop familiarization with materials and basic understanding of several off-loom construction techniques. Emphasis on techniques requiring little specialized equipment with materials that are found readily in the environment. Overview of historical background and contemporary Fiber Art. May be taken three times for credit.

ART 33 ART METAL CASTING
Units: 3  
Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Exploration of cast metal for sculpture and functional and nonfunctional art forms. Emphasis on history, design, techniques, vocabulary and safety. Includes lost wax, rigid investments, sand casting and other traditional and nontraditional art foundry methods, for both bronze and aluminum. May be taken three times for credit.

ART 35 ART GALLERY OPERATIONS
Units: 3  
Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
The business of art for artists and students pursuing careers in the visual arts. Includes all aspects of gallery management including participating in the creation of exhibits, installing exhibits, preparing marketing and promotional materials, establishing business practices, and managing collections. May be taken twice for credit.

ART 40A PRINTMAKING
Units: 3  
Transfer: CSU/UC
Hours: 5 (2 lecture, 3 laboratory)
Introduction to printmaking processes. Direct practice in wood cut, lino cut, colograph, and monotype.

ART 40B PRINTMAKING
Units: 3  
Transfer: CSU/UC
Prerequisite: Completion of Art 40A
Hours: 5 (2 lecture, 3 laboratory)
Continued study of printmaking processes. Direct practice in relief, intaglio, colograph and monotype. May be taken three times for credit.

ART 41 JEWELRY DESIGN
Units: 3  
Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Introduction to the concepts, techniques, and tools used in design and fabrication of jewelry. The implication and effects of history and culture of jewelry and body ornamentation are explored. Soldering, “lost wax” casting, forming, and stone setting in non-ferrous metals (copper, brass, silver) will be covered. May be taken three times for credit.

ART 50 ART GALLERY OPERATIONS
Units: 3  
Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
The business of art for artists and students pursuing careers in the visual arts. Includes all aspects of gallery management including participating in the creation of exhibits, installing exhibits, preparing marketing and promotional materials, establishing business practices, and managing collections. May be taken twice for credit.

ART 52 PORTRAIT DRAWING AND PAINTING
Units: 3  
Transfer: CSU/UC
Advisory: Completion of Art 4A recommended
Hours: 5 (2 lecture, 3 laboratory)
Introduction to drawing and painting the human portrait from live models. Basic proportions, facial features, basic rendering and painting techniques, and portrayal of individual portrait characteristics with a variety of drawing and painting media. Historical study of the art form of portrait integrated into studio projects. May be taken three times for credit.
ART 54 DESCRIPTIVE DRAWING
Units: 3
Transfer: CSU/UC
Advisory: Completion of Art 4A recommended
Hours: 5 (2 lecture, 3 laboratory)
Course in objective drawing focusing on the development of skills in the rendering of objects in a dimensional space. Concentration on the depiction of form as represented by light, shadow, and texture. Includes the study and use of linear and atmospheric perspectives and a variety of still life, landscape, and figurative sources. May be taken twice for credit.

ART 55 ILLUSTRATION (ALSO ART/DES. 55)
Units: 3
Transfer: CSU
Prerequisite: Completion of Art 4A
Hours: 4 (2 lecture, 2 activity)
Professional practices of illustration, including concept development, communication of ideas, identification and use of appropriate styles and techniques, time management, and presentation of finished work. May be taken twice for credit.

ART 71 INTRODUCTION TO DIGITAL PAINTING (ALSO ART/DES. 71)
Units: 3
Transfer: CSU
Prerequisite: Completion of Art 4A
Hours: 6 (1.5 lecture, 4.5 laboratory)
Introduction to drawing and painting on the computer. Exploration of tools, color palettes, brush options, paper textures, effects and manipulation of layers and masks in a digital painting program. Includes integration of off-computer drawing and painting processes and techniques with digital image development. Projects are created in preparation for printing on artist’s quality papers, or for use in other digital applications and the World Wide Web. May be taken four times for credit.

ART 80 ISSUES IN CONTEMPORARY ART
Units: 3
Transfer: CSU/UC
Advisory: Completion of Art 10 recommended
Hours: 3 lecture
Current trends in art including philosophy and critical theory, use of modern technologies, government involvement in the arts, and gender issues. Also includes a critical investigation of social structures that inform art production, display, and patronage.

ART 400 SELECTED TOPICS IN ART
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Astronomy

SCIENCE & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: D. Dunn, H. Houpis, D. Kenyon
LIAISON COUNSELORS: T. Maddux, P. Neal

The Astronomy curriculum introduces students to basic topics such as the characteristics of the Solar System, the nature of the sun and other stars, the galaxy we exist in, its extent and evolution.

Several different level courses are presented in a multimode instructional fashion—for example, multi-media, planetarium presentations, and laboratory and field experiences. Special emphasis is placed on the understanding of observable celestial phenomena and events familiar to the individual’s natural environment. The program is not designed to prepare students for Astronomy majors and does not presume extensive backgrounds in science and mathematics.

ASTRONOMY COURSES

ASTRON. 2 INTRODUCTION TO PLANETARY SYSTEMS
Units: 2
Transfer: CSU/UC
Advisory: Completion of English 50 or equivalent
Hours: 3 lecture
General principles and fundamental facts of astronomy associated with planetary systems. Visual concepts emphasized through multimedia presentations and planetarium demonstrations. Peer-based exercises and computer interaction emphasized. Includes historical developments of planetary astronomy, basic principles of planetary system observations and analysis, and general concepts for interpreting the night sky with charts and almanacs. Particular detail given to the formation, evolution, and current condition of the Sun and Solar System, as well as current knowledge of other planetary systems. Possibilities for life in planetary environments discussed.
ASTRON. 5 INTRODUCTION TO STARS, GALAXIES, AND THE UNIVERSE
Units: 3 Transfer: CSU/UC
Advisory: Completion of English 50 or equivalent
Hours: 3 lecture
General principles and fundamental facts of astronomy emphasizing stars, galaxies, and the universe. Visual concepts emphasized through multimedia presentations and planetarium demonstrations. Peer-based exercises and computer interaction emphasized. Includes historical developments of astronomy, basic principles of astronomical observations and analysis, and general concepts for interpreting the night sky with charts and almanacs. Particular detail given to structure and evolution of stars, general characteristics of deep sky objects (star clusters, nebulae, and galaxies), large-scale structure of the Universe, and cosmology. Possibilities for life within the Milky Way Galaxy and beyond discussed.

ASTRON. 10 ELEMENTARY ASTRONOMY
Units: 3 Transfer: CSU/UC
Advisory: Completion of English 50 or equivalent strongly recommended
Hours: 3 lecture
General principles and the fundamental facts of astronomy. Visual concepts emphasized through multimedia presentations and planetarium. Hands-on exercises and computer interaction emphasizing astronomical principles. Includes historical developments of astronomy, the formation, evolution and current condition of sun and solar system, stellar structure and evolution, deep sky objects (star clusters, nebulae, galaxies), structure of universe, and cosmology. Not open to students who have successfully completed Astron. 2 and 5.

ASTRON. 11 OBSERVATIONAL ASTRONOMY
Units: 1 Transfer: CSU/UC
Prerequisite: Completion of Math. D, and either Astron. 10, Physics 4A, or E.Sci. 10, or equivalent
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 laboratory
Basic interpretation of astronomical observations through telescopes, binoculars, computers, cameras, and other simple measuring equipment. Use of planetarium to facilitate recognition of constellations, stars, planetary motions, and study coordinate systems and celestial motions. Development of observational skills to study outdoor sky and outcomes of indoor laboratory experiments. Emphasis on quantitative and qualitative analysis of variety of astronomical data.

ASTRON. 14 ASTROPHOTOGRAPHY AND IMAGING
Units: 1 Transfer: CSU/UC
Prerequisite: Completion of, or concurrent enrollment in, Astronomy 2, Astronomy 5, Astronomy 10, or equivalent
Advisory: Completion of English 50 or equivalent strongly recommended
Hours: 3 laboratory
Basic principles and practices of astrophotography and image processing. Astronomical observations and data collection associated with the use of telescopes, binoculars, computers, cameras, and other related equipment. Development of observational techniques and data analysis procedures for the study of the outdoor sky with related indoor experiments and studies. Particular emphasis placed on quantitative and qualitative analysis of a variety of astronomical data collected with 35mm and CCD digital cameras.

ASTRON. 25 FRONTIERS IN ASTRONOMY
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Math. D, and either Astron. 10, Physics 4A, or E.Sci. 10, or equivalent
Hours: 3 lecture
Topics at the forefront of astronomical research including an in-depth look beyond introductory astronomy. Emphasis on theoretical principles and supporting observational data. Includes relativity and warped spacetime, black holes, dark matter, quasars, gravitational waves, grand unified and super symmetry theories, and other recent developments in cosmology.

ASTRON. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ASTRON. 300 SELECTED TOPICS IN ASTRONOMY
Units: .5-4 Transfer: CSU/UC
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

The Automotive Technology Curriculum is designed (1) to prepare students to become competent technicians and gain employment in the automotive industry at the completion of the program and (2) to upgrade skills of those already in the field.

A.A. and A.S. degrees as well as certificates can be earned in the automotive field. The certificate programs do not satisfy A.A./A.S. degree requirements but do qualify students for certificates in the field of study.

**AUTOMOTIVE ANALYSIS—A.A. OR A.S. DEGREE**

Successful completion of the curriculum in Automotive Analysis qualifies students for entry-level positions in the various areas of automotive technology, and provides them with an overview for selecting specific areas for further training and education. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>(24 UNITS FROM THE FOLLOWING):</td>
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<tr>
<td>A.T. 31 Automotive Emission Control Systems</td>
<td>4.5</td>
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<tr>
<td>A.T. 60 Skill &amp; Speed Development OR</td>
<td></td>
</tr>
<tr>
<td>A.T. 160 Skill &amp; Speed Development in Wheel</td>
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<tr>
<td>Alignment/Braking/Hydraulics OR</td>
<td></td>
</tr>
<tr>
<td>A.T. 162 Skill &amp; Speed Development in Power Train</td>
<td>2</td>
</tr>
<tr>
<td>A.T. 61 Vehicle &amp; Engine Analyzing</td>
<td>4</td>
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<tr>
<td>A.T. 62A Carburetion &amp; Fuel Systems</td>
<td>4</td>
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<tr>
<td>A.T. 63 Advanced Engine Performance Diagnosis</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 64 Hydraulic &amp; Brake Systems</td>
<td>4</td>
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<tr>
<td>A.T. 66A Engine Reconditioning</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 68A Basic Automatic Transmissions</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 69 Automotive Air Conditioning &amp; Heating</td>
<td>4</td>
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<tr>
<td>A.T. 71A Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 79 Suspension and Wheel Alignment</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 80 Automotive Power Trains</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 62B or 66B or 75</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL UNITS REQUIRED: 24</td>
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<tr>
<td>Recommended Electives: A.T. 1, A.T. 95, Business</td>
<td></td>
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<tr>
<td>20, Business 100, Chem. 10, for students with</td>
<td></td>
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<tr>
<td>particular interest in these areas.</td>
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</tbody>
</table>

**CERTIFICATES**

The Automotive Technology certificate program is designed to qualify students for specialized positions in automotive repair and related industries and to upgrade the skills of technicians already in the field. The program also includes the Master Automotive Technician Certificate, which certifies competence in all areas of conventional automotive repair and maintenance. Certificate patterns consist of course concentration in specific areas, plus study in relevant areas such as Introduction to Welding Technology (Weld Tec 20). The Manufacturers Sales Representative requires study in business practices, communications, and math skills. General Education classes are not required. Specialized certificates require 18 to 44.5 units of course work, while the Master Automotive Technician Certificate requires 59 units. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**LICENSES**

Automotive Emission Control
Automotive Lighting Systems
Automotive Brake Systems

The Automotive Technology program offers courses designed for mechanics who want to apply for a new license, or renew a license, in the areas of emission control, lighting, and brake systems. See A.T. 31 and 64.

**AIR CONDITIONING AND BODY ELECTRICAL CERTIFICATE**

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>A.T. 1 Automotive Data Acquisition</td>
<td>5</td>
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<tr>
<td>A.T. 60 Skill &amp; Speed Development (arrange with</td>
<td>4</td>
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<tr>
<td>instructor) OR</td>
<td></td>
</tr>
<tr>
<td>A.T. 61 Vehicle &amp; Engine Analyzing</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 69 Automotive Air Conditioning &amp; Heating</td>
<td>4</td>
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<tr>
<td>A.T. 71A Automotive Electrical Systems</td>
<td>4</td>
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<tr>
<td>A.T. 75 Automotive Electronics</td>
<td>4</td>
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<tr>
<td>A.T. 95 Internship in Automotive Technology</td>
<td>5-3</td>
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<tr>
<td>TOTAL UNITS REQUIRED: 21-23.5</td>
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</tr>
</tbody>
</table>

**ALIGNMENT AND BRAKE CERTIFICATE**

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>A.T. 1 Automotive Data Acquisition</td>
<td>5</td>
</tr>
<tr>
<td>A.T. 60 Skill &amp; Speed Development (arrange with</td>
<td>3</td>
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<tr>
<td>instructor) OR</td>
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<tr>
<td>A.T. 160 Skill &amp; Speed Development in Wheel</td>
<td>3</td>
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<tr>
<td>Alignment/Braking/Hydraulics OR</td>
<td></td>
</tr>
<tr>
<td>A.T. 64 Hydraulic &amp; Brake Systems</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 71A Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 79 Suspension and Wheel Alignment</td>
<td>4</td>
</tr>
<tr>
<td>A.T. 95 Internship in Automotive Technology</td>
<td>5-3</td>
</tr>
<tr>
<td>Weld Tec 20 Introduction to Welding Technology</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL UNITS REQUIRED: 19-21.5</td>
<td></td>
</tr>
</tbody>
</table>
AUTOMATIC TRANSMISSION CERTIFICATE

REQUIRED COURSES
A.T. 1 Automotive Data Acquisition. 5
A.T. 60 Skill & Speed Development (arrange with instructor) 4
A.T. 68A Basic Automatic Transmissions. 4
A.T. 71A Automotive Electrical Systems 4
A.T. 80 Automotive Power Trains. 4
Weld Tec 20 Introduction to Welding Technology 3

TOTAL UNITS REQUIRED: 19.5

AUTOMOTIVE ENGINE MACHINING CERTIFICATE

REQUIRED COURSES
A.T. 1 Automotive Data Acquisition. 5
A.T. 60 Skill & Speed Development (arrange with instructor) 6
A.T. 66A Engine Reconditioning 4
A.T. 66B Engine Reconditioning 4
A.T. 95 Internship in Automotive Technology 5-3
Weld Tec 20 Introduction to Welding Technology 3

TOTAL UNITS REQUIRED: 18-20.5

EMISSION AND DRIVEABILITY TUNE-UP CERTIFICATE

REQUIRED COURSES
A.T. 1 Automotive Data Acquisition. 5
A.T. 31 Automotive Emission Control Systems OR Possession of California Smog Certification License. 0-4.5
A.T. 34 Advanced Emissions Diagnostics & Service OR Possession of California Smog Certification License. 0-1.5
A.T. 60 Skill & Speed Development (arrange with instructor) OR A.T. 95 Internship in Automotive Technology 4
A.T. 61 Vehicle & Engine Analyzing 1
A.T. 62A Carburetion & Fuel Systems 4
A.T. 62B Computer Controlled Carburetion & Fuel Injection 4
A.T. 63 Advanced Engine Performance Diagnosis 4
A.T. 69 Automotive Air Conditioning & Heating 4
A.T. 71A Automotive Electrical Systems 4
A.T. 75 Automotive Electronics 4

TOTAL UNITS REQUIRED: 29.5-35.5

MASTER AUTOMOTIVE TECHNICIAN CERTIFICATE

REQUIRED COURSES
A.T. 1 Automotive Data Acquisition. 5
A.T. 31 Automotive Emission Control Systems 4.5
A.T. 60 Skill & Speed Development OR A.T. 160 Skill & Speed Development in Wheel Alignment/Braking/Hydraulics OR A.T. 162 Skill & Speed Development in Power Train 3
A.T. 61 Vehicle & Engine Analyzing 4

TOTAL UNITS REQUIRED: 21-35.5

A.T. 62A Carburetion & Fuel Systems 4
A.T. 63 Advanced Engine Performance Systems 4
A.T. 64 Hydraulic & Brake Systems 4
A.T. 66A Engine Reconditioning 4
A.T. 68A Basic Automatic Transmissions 4
A.T. 69 Automotive Air Conditioning & Heating 4
A.T. 71A Automotive Electrical Systems 4
A.T. 79 Suspension and Wheel Alignment 4
A.T. 80 Automotive Power Trains. 4
Weld Tec 20 Introduction to Welding Technology 3

PLUS 8 ADDITIONAL UNITS FROM:
A.T. 62B Computer Controlled Carburetion & Fuel Injection 4
A.T. 66B Engine Reconditioning 4
A.T. 75 Automotive Electronics 4

TOTAL UNITS REQUIRED: 59

POWER TRAIN CERTIFICATE

REQUIRED COURSES
A.T. 1 Automotive Data Acquisition. 5
A.T. 60 Skill & Speed Development (arrange with instructor) OR A.T. 162 Skill & Speed Development in Power Train 3
A.T. 68A Basic Automatic Transmissions. 4
A.T. 71A Automotive Electrical Systems 4
A.T. 80 Automotive Power Trains. 4
Weld Tec 20 Introduction to Welding Technology 3

TOTAL UNITS REQUIRED: 18.5

Recommended Electives:
A.T. 66A and 79 for students with particular interest in these areas.

AUTOMOTIVE TECHNOLOGY COURSES

A.T. 1 AUTOMOTIVE DATA ACQUISITION
Units: .5
Hours: As scheduled for a total of 11 hours (7 lecture, 4 activity)
Automotive data retrieval and usage to include locating and using on-line technical manuals, ALLDATA-based technical manuals, and text-based technical manuals. Computer-based repair order generation, usage, and technical writing skills as well as computerized automotive shop management systems, including PATC and Nissan Information Systems. Strongly recommended for all Automotive Program students, preferably in their first year of study.

A.T. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.
A.T. 31 AUTOMOTIVE EMISSION CONTROL SYSTEMS  
Units: 4.5  
Prerequisite: Completion of A.T. 71A or equivalent experience  
Hours: As scheduled for a total of 81 lecture hours  
Training for both BAR Basic Clean Air Car course and level three citation training requirements for smog technicians. Emission control systems and their effects on internal combustion engines. Proper use and maintenance of state certified vehicle emission testing equipment. Successful completion of BAR Basic Clean Air Car course examination is required for the BAR EA and EB smog license examination. May be taken four times for credit.

A.T. 34 ADVANCED EMISSIONS DIAGNOSTICS AND SERVICE  
Units: 1.5  
Advisory: Completion of A.T. 31 recommended  
Hours: As scheduled for a total of 29 lecture hours  
Advanced emission testing and repairs for “enhanced emission areas” of the State of California. Includes baseline techniques for loaded mode testing, dynamometers, B.A.R. 97 Transition Dyno Safety, advanced wave form patterns, diagnostic strategies, and information specific to California emission standards. Upon successful completion, student may become eligible for State of California Advanced Emission Specialist License. Student must be certified in ASE A6-A8 and L.1 or have taken B.A.R. approved alternative courses to be eligible for B.A.R. certification.

A.T. 55 LANDSCAPE AND GARDEN MACHINE MAINTENANCE (ALSO AG. 41)  
Units: 2  
Hours: 4 (1 lecture, 3 laboratory)  
Minor repair and replacement of engine parts and accessories on two-stroke cycle engines and machines, including chain saws and machinery normally used in grounds maintenance. Includes fuel and ignition systems, cooling systems, belt and chain drives, transmissions, blade sharpening, and preventive maintenance procedures and adjustments. May be taken three times for credit.

A.T. 56 FOUR-CYCLE ENGINE MAINTENANCE AND REPAIR (ALSO AG. 42)  
Units: 2  
Hours: 4 (1 lecture, 3 laboratory)  
Minor and major maintenance and repair, tune-up and overhaul of four-cycle gasoline engines. Includes engines used for mowers, tillers, shredders, mulchers, pumps, sprayers, wood splitters, and garden tractors. May be taken twice for credit.

A.T. 59 INTRODUCTION TO AUTOMOTIVE SERVICE  
Units: 4  
Transfer: CSU  
Hours: 6 (3 lecture, 3 laboratory)  
Designed for students with little to no formal background or training in the automotive field, covering: engine operation, lubrication, cooling, ignition, electrical, suspension, A/C, fuel systems, brakes, tires and drive train. Other topics will also be covered, such as: shop safety, tool usage, and hazardous waste management. Emphasis on hands-on activities.

A.T. 60 SKILL AND SPEED DEVELOPMENT  
Units: 1-3  
Transfer: CSU  
Prerequisite: Completion of one or more courses in the appropriate degree or certificate pattern  
Hours: 3 laboratory hours per unit for each subtitle  
Designed to further develop skill, speed, and experience capabilities of Automotive majors. Individual projects are selected by students with the agreement and guidance of the instructor. Required of all Automotive majors and Automotive certificate students in their areas of concentration. Materials fee. Not to exceed a cumulative total of 12 units for the A.T. 60 classes.

A.T. 60C SKILL AND SPEED DEVELOPMENT IN AIR CONDITIONING & BODY ELECTRICAL  
Units: 1-3  
Transfer: CSU  
Designed to further develop a student’s skill, speed, and experience in diagnosis and service of vehicle air conditioning and heater systems and related body electrical.

A.T. 61 VEHICLE AND ENGINE ANALYZING  
Units: 4  
Transfer: CSU  
Hours: 6 (3 lecture, 3 laboratory)  

A.T. 62A CARBURETION AND FUEL SYSTEMS  
Units: 4  
Transfer: CSU  
Hours: 6 (3 lecture, 3 laboratory)  
Basic principles of fuel delivery systems and a survey of the principles of emission controls and computer controlled carburetion. Emphasis on basic circuitry and adjustment procedures. A study of the relationship of today’s gasoline, engine performance and carburetion with methods of on vehicle troubleshooting and repair. Preparation for ASE Certification exam.
A.T. 62B COMPUTER CONTROLLED CARBURETION AND FUEL INJECTION
Units: 4 Transfer: CSU
Prerequisite: Completion of A.T. 61, 62A, and 71A, or equivalent experience
Hours: 6 (3 lecture, 3 laboratory)
Applications, theory of operation, and service to electronic computer controlled carburetion, fuel injection, and emission control systems. Diagnosis and repair driveability and engine performance faults involving computer command control, electronic fuel injection and port fuel injection systems. Preparation for ASE Certification exam.

A.T. 63 ADVANCED ENGINE PERFORMANCE DIAGNOSIS
Units: 4 Transfer: CSU
Prerequisite: Completion of A.T. 61, 62A, and 71A, or equivalent experience
Hours: 6 (3 lecture, 3 laboratory)
Study of theory application, diagnosis, and service of kettering and electronic ignitions, fuel systems, emission control systems, charging and cranking systems. Emphasis on advanced engine performance diagnosis on OBD I and OBD II vehicles using scanners, oscilloscopes, infrared analyzers, engine electrical analyzers, pressure and vacuum gauges, multimeters, and digital storage scopes. Preparation for ASE Certification exam.

A.T. 64 HYDRAULIC AND BRAKE SYSTEMS
Units: 4 Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Application of principles, inspection, and evaluation of industry practice in the diagnosis, service, and repair of drum brakes, disc brakes, power-assist devices, and anti-lock brake systems. Complete machining of drums and rotors. Prepares students for California State Brake Adjuster License and ASE Brake Certification exam.

A.T. 66B ENGINE RECONDITIONING
Units: 4 Transfer: CSU
Prerequisite: Completion of A.T. 66A
Hours: 6 (3 lecture, 3 laboratory)
Advanced engine machinist course. Students are required to completely rebuild one liquid-cooled engine. Engine and parts to be supplied by the student; cost varies from $300 to $1,000. Preparation for ASE Certification exam.

A.T. 68A BASIC AUTOMATIC TRANSMISSIONS
Units: 4 Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
General theories of operation of automatic transmissions. Including, but not limited to: hydraulic torque multipliers, planetary gears and shafts, hydraulic systems and apply devices. Emphasis on power flow, diagnosis, adjustment, service, repair, and rebuilding of transmissions used on domestic and foreign automobiles. Rebuilding and test running on transmission dynamometer. Preparation for ASE Certification exam.

A.T. 68B AUTOMATIC TRANSMISSIONS AND TRANSAXLES (Inactive 2-14-05)

A.T. 69 AUTOMOTIVE AIR CONDITIONING AND HEATING
Units: 4 Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Principles in automotive air conditioning and heating systems. Emphasis on theory, controls, diagnosis, service, repair, and installation. A study in heat transfer, with methods of troubleshooting and repair of live vehicle air conditioning and heating systems. Course includes use of State and Federal approved recovery and recycling equipment. Preparation for ASE Certification exam.

A.T. 71A AUTOMOTIVE ELECTRICAL SYSTEMS
Units: 4 Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Study of the theory, testing, diagnosis, and service of common body and engine electrical circuits, including batteries, switching, fusing, relays, thermal timers, DC motors, alternator principles series, parallel circuits with live system failure diagnosis using voltmeters, ammeters, and ohmmeters. Preparation for ASE Certification exam.

A.T. 75 AUTOMOTIVE ELECTRONICS
Units: 4 Transfer: CSU
Prerequisite: Completion of A.T. 71A or equivalent
Hours: 6 (3 lecture, 3 laboratory)
Advanced study in automotive electronics and control systems; resistor, capacitor, inductor, diode, and transistor circuitry with application to solid state sensors, controllers, and actuators. In depth study on electrical diagnostics using digital storage oscilloscope. Preparation for ASE Certification exam.
A.T. 79 SUSPENSION AND WHEEL ALIGNMENT  
(FORMERLY A.T. 77 & 78)  
Units: 4  
Transfer: CSU  
Hours: 6 (3 lecture, 3 laboratory)  
Principles of wheel alignment, steering, suspension components, methods of vehicle measurements for rear-wheel drive vehicles, front-wheel drive vehicles, and light trucks including four-wheel drive alignment. Identification and correction of damaged and worn steering components and wheel system. Emphasis on measurement result analysis, including conventional and strut-type suspension systems. Preparation for ASE Certification.

A.T. 80 AUTOMOTIVE POWER TRAINS  
(FORMERLY A.T. 72 & 73)  
Units: 4  
Transfer: CSU  
Hours: 6 (3 lecture, 3 laboratory)  
A study of the vehicle power train, and methods of delivering power from the engine to the drive wheels. Includes details of power flow in a manual transmission/transaxle, gear ratios, driveline components and construction, differential components and construction, clutch systems, and drive axles. Troubleshooting techniques and diagnostic procedures will be applied. Preparation for ASE Certification exam.

A.T. 81 COMPUTERIZED ENGINE ANALYZER  
Units: 1.5  
Transfer: CSU  
Prerequisite: Completion of A.T. 62B, 63, and 71A, or equivalent experience  
Hours: As scheduled for a total of 36 hours (24 lecture, 12 laboratory)  
Theory of operation and hands-on practices in using a computerized engine analyzer, digital storage oscilloscopes, five-gas emission analyzer, and hand-held diagnostic scan tools. Develops experience in diagnosing vehicles equipped with On Board Diagnostic 1 (OBD1) computerized engine control systems. Prepares for ASE Certification exam.

A.T. 82 COMPUTER ANALYZER ENGINE DIAGNOSIS  
Units: 1.5  
Transfer: CSU  
Prerequisite: Completion of A.T. 81 or equivalent experience  
Hours: As scheduled for a total of 36 hours (24 lecture, 12 laboratory)  
Advanced engine and emission control testing, diagnosis and service. Includes twenty hours of training required by Bureau of Automotive Repair for On Board Diagnostic 2 (OBD2) updates. Required to obtain smog check technician license or license renewal. May be taken two times for credit.

A.T. 95 INTERNSHIP IN AUTOMOTIVE TECHNOLOGY  
Units: .5-4  
Transfer: CSU*  
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships  
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of air conditioning and heating, alignment and suspension, brakes, automatic or manual transmission/drivetrain, engine repair/machining, electrical and electronic systems, emission control, and driveability/engine performance. Provides new on-the-job technical training under the direction of a worksite supervisor allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

A.T. 160 SKILL AND SPEED DEVELOPMENT IN WHEEL ALIGNMENT/BRAKING/HYDRAULICS  
(FORMERLY A.T. 60B)  
Units: 1-3  
Hours: As scheduled for a total of 3 laboratory hours per unit  
Designed to further develop a student’s skill, speed, and experience in diagnosis and service of automotive suspension, alignment and brake systems.

A.T. 162 SKILL AND SPEED DEVELOPMENT IN POWER TRAIN  
(FORMERLY A.T. 60E)  
Units: 1-3  
Hours: As scheduled for a total of 3 laboratory hours per unit  
Designed to further develop a student’s skill, speed, and experience in diagnosis and service of the vehicle power train system.

A.T. 300 SELECTED TOPICS IN AUTOMOTIVE TECHNOLOGY  
Units: .5-4  
Transfer: CSU  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Anatomy, Biology, Botany, Microbiology, Physiology, and Zoology

The Biological Sciences Department offers course work in Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Biological Sciences

SCIENCEs & MATHEMATICs

DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: HT 4


LIAISON COUNSELORS: S. Muraki, B. Ruud

The Biological Sciences Department offers course work in Anatomy, Biology, Botany, Microbiology, Physiology, and Zoology. Transfer students planning to major in Biology, Botany, Zoology, Ecology, Microbiology, Anatomy, Physiology, Forestry, Wildlife Management, Natural Resources, Medicine, Dentistry, Veterinary Medicine, Optometry, and Pharmacy should consult a counselor and the appropriate college catalog for a suggested program of course work at Sierra College.

TRANSFER AND MAJOR REQUIREMENTS in Biological Sciences are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

BIOLOGICAL SCIENCES—A.S. DEGREE

The Biological Science curriculum provides students with the opportunity to meet the requirements for transferring to four-year colleges in the areas of Agriculture, Animal Science, Biochemistry, Bioengineering, Biological Sciences, Biotechnology, Chiropractic, Clinical Lab Technician, Curator, Dental Hygiene, Dentistry, Environmental Studies, Forestry, Nutrition/Dietetics, Occupational Therapy, Plant Science, Pharmacy, Physical Therapy, Premedical, Nursing, Range Management, Veterinary Medicine, Wildlife/Fisheries Biologist and Zoologist, or entry level positions in related fields. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

REQUIRED COURSES

(12 UNITS FROM THE FOLLOWING):

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio.Sci. 1 General Biology</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 2 Botany</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 3 General Zoology</td>
<td>4</td>
</tr>
</tbody>
</table>

Plus 9 units from any of the following:

ANIMAL STUDY EMPHASIS:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio.Sci. 3 General Zoology</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 33 Introduction to Zoology</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 16D Biology of Waterfowl and Marsh Birds</td>
<td>5</td>
</tr>
</tbody>
</table>

PLUS AT LEAST 8 UNITS FROM OTHER COURSES LISTED ABOVE OR FROM:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Chem. 1A-1B General Chemistry</td>
<td>5-5</td>
</tr>
<tr>
<td>Chem. 2A-2B Introduction to Chemistry</td>
<td>5-5</td>
</tr>
<tr>
<td>Chem. 3A-3B General Chemistry</td>
<td>2/3-3</td>
</tr>
<tr>
<td>Geology 1 Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>Math. 8 Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>Math. 12 College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>Math. 13 Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>Math. 16A/16B Calculus for Social &amp; Life Sciences</td>
<td>4-4</td>
</tr>
<tr>
<td>Math. 29 Pre-Calculus Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>Math. 30 Analytical Geometry &amp; Calculus</td>
<td>4-5</td>
</tr>
<tr>
<td>Math. 42 Business Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Physics 2A-2B General Physics OR</td>
<td></td>
</tr>
<tr>
<td>Physics 4A-4B Principles of Physics</td>
<td>4-4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 20

Recommended Electives:

Bio.Sci. 16, C.S. 10 or C.I.S. 50, Int. 1

Note: The courses listed above may or may not satisfy Biological Science requirements at all transfer colleges. See a counselor.

WATERSHED ECOLOGY—A.S. DEGREE OR CERTIFICATE

The Watershed Ecology Technician's (WET) program offers courses leading to a certificate as well as an Associate in Science degree. Watershed ecology includes the study of all aspects of the environment including organisms within an entire watershed—the land area draining into the major creeks and river systems. The program can serve as the basic preparation for entry-level positions with organizations and governmental agencies that perform a variety of environmental studies. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

REQUIRED CORE COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio.Sci. 11 Concepts of Biology OR</td>
<td></td>
</tr>
<tr>
<td>Bio.Sci. 1 General Biology</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 14 Natural History, Ecology, and Conservation</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 13A Environmental Regulations</td>
<td>1</td>
</tr>
<tr>
<td>Bio.Sci. 13B Field Methods in Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Bio.Sci. 95 Internship in Biological Sciences</td>
<td>1</td>
</tr>
<tr>
<td>English 12 Writing in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>Geog. 90/D.D. 90 Introduction to Geographic Information Systems (GIS)</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 9 UNITS FROM ANY OF THE FOLLOWING:

ANIMAL STUDY EMPHASIS:

<table>
<thead>
<tr>
<th>COURSE</th>
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</tr>
</thead>
<tbody>
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</tr>
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<td>Bio.Sci. 33 Introduction to Zoology</td>
<td>4</td>
</tr>
<tr>
<td>Bio.Sci. 16D Biology of Waterfowl and Marsh Birds</td>
<td>5</td>
</tr>
</tbody>
</table>
BIO.SCI. 1 GENERAL BIOLOGY
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of Chemistry 1A, or 3A and 3B (may be taken concurrently), or high school chemistry
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended.
Hours: 6 (3 lecture, 3 laboratory)
Emphasizes the basic biological principles as related to cell structure and function, levels of organization, cell reproduction, genetics, development, evolution, and ecology. (CAN BIOL 2)(With Bio.Sci. 2 & 3, CAN BIOL SEQ_A)

BIO.SCI. 2 BOTANY
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of Bio.Sci. 1
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 8 (2 lecture, 6 laboratory)
A detailed survey of the kingdoms Protista, Fungi and Plants. Structure, function, ecology and evolution of each group. Emphasis placed on the plant kingdom. Ecological and evolutionary principles stressed. Correlation of such principles with facts and modern biology. Nonlife science majors see Biological Sciences 14, 22, and 44. (CAN BIOL 6)(With Bio.Sci. 1 & 3, CAN BIOL SEQ_A)

BIO.SCI. 3 GENERAL ZOOLOGY
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of Bio.Sci. 1 or Bio.Sci. 33
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 8 (2 lecture, 6 laboratory)
A detailed survey of the animal kingdom stressing evolution and ecology of animals and functional anatomy of their major organ systems. Recommended for life science majors; premedical, preveterinary and related professional programs. (CAN BIOL 4)(With Bio.Sci. 1 & 2, CAN BIOL SEQ_A)

BIO.SCI. 4 MICROBIOLOGY
Units: 5 Transfer: CSU/UC
Prerequisite: Completion of Chemistry A or 1A or 2A or 3A/3B or high school chemistry
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory)
Introduction to the biochemistry, morphology, physiology, genetics, classification, and significance of microorganisms, especially bacteria and viruses. Emphasis on medically important organisms and their impact on human health. (CAN BIOL 14)

BIO.SCI. 5 HUMAN ANATOMY
Units: 4 Transfer: CSU/UC
Advisory: Completion of Bio.Sci. 55, 56 or H.Sci. 3 or previous science course or experience in health care field, and completion of English 50 or equivalent
Hours: 6 (3 lecture, 3 laboratory)
Structure, relationships among structures, and histology of the organ systems of the human body. A rigorous course in human anatomy designed especially for science/medical majors (for example, premedical, predental, prenursing, occupational and physical therapy, laboratory technician, medical technician, physical education, zoology, biology, and other science-oriented majors). Cats dissected and cadaver prosections utilized in the laboratory. Nonmajors see Biological Sciences 55, 56, and 56L. (CAN BIOL 10)(With Bio.Sci. 6, CAN BIOL SEQ_B)
BIO.SCI. 6 HUMAN PHYSIOLOGY
Units: 5  Transfer: CSU/UC*  
Prerequisite: Completion of Chemistry 1A or 2A or 3A/3B and Bio.Sci. 5 or 7A/7B or 55  
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended  
Hours: 7 (4 lecture, 3 laboratory)  
A study of the function, regulation, and homeostasis of systems in the human body. Recommended for students in nursing, medicine, physical education, physical and occupational therapy, psychology, and life science majors. Experiments on nonliving systems, blood and circulation, muscle, nervous system and sense organs, ion balance and fluid environment, endocrines, respiration, and digestion. (CAN BIOL 12) (With Bio.Sci. 5, CAN BIOL SEQ B)

BIO.SCI. 7A PRINCIPLES OF HUMAN ANATOMY
Units: 2  Transfer: CSU/UC*  
Advisory: Completion of Bio.Sci. 55 or 56 or H.Sci. 3 or previous science course or experience in health care field and completion of English 50 or equivalent strongly recommended  
Hours: 4 (2 lecture, 2 laboratory)  
Structure, relationships among structures, and histology of the organ systems of the human body. Includes integumentary, skeletal, nervous, and sensory systems. Cats dissected and cadaver prosections are used for instruction. The sequence of Bio.Sci. 7A/7B is equivalent to Bio. Sci. 5. (With Bio.Sci. 7B, CAN BIOL 10)

BIO.SCI. 7B PRINCIPLES OF HUMAN ANATOMY
Units: 2  Transfer: CSU/UC*  
Prerequisite: Completion of Bio.Sci. 7A with a grade of “C” or better  
Advisory: Completion of English 50, or equivalent strongly recommended  
Hours: 4 (2 lecture, 2 laboratory)  
Structure, relationships among structures, and histology of the organ system of the human body. Includes muscle, cardiovascular, lymphatic, endocrine, respiratory, digestive, urinary and reproductive systems. Cats dissected and cadaver prosections are used for instruction. The sequence of Bio.Sci. 7A/7B is equivalent to Bio.Sci. 5. (With Bio.Sci. 7A, CAN BIOL 10)

BIO.SCI. 10 INTRODUCTION TO BIOLOGY
Units: 3  Transfer: CSU/UC*  
Advisory: Eligibility for English 1A or E.S.L. 40W  
Hours: 3 lecture  
Designed specifically for non-life science majors, covering organization of life, cellular processes, genetics and evolution, diversity of life, ecology, and the impact of humans on, and interdependence with, the environment. Will meet life science requirements in most general education programs. Not recommended for students who have taken advanced biology in high school. Does not fulfill laboratory science requirement. Not open to those who have completed Bio.Sci. 1 or Bio.Sci. 11.

BIO.SCI. 11 CONCEPTS OF BIOLOGY
Units: 4  Transfer: CSU/UC*  
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended  
Hours: 6 (3 lecture, 3 laboratory)  
An introduction to the major concepts of biology as illustrated in plant and animal groups. Covers cell biology, heredity and nature of genes, evolution, diversity of life, and principles of ecology. Primarily for nonlife science majors desiring an introductory biology course with a lab. Not open to those who have completed Bio.Sci. 1, 10 or 56.

BIO.SCI. 13A ENVIRONMENTAL REGULATIONS
Units: 1  Transfer: CSU  
Advisory: Completion of Bio.Sci. 14 or equivalent strongly recommended  
Hours: 1 lecture  
Survey of major California environmental regulations plus relevant federal regulations. Designed using case study analyses to explore environmental laws applicable to water, land and air resources.

BIO.SCI. 13B FIELD METHODS IN ECOLOGY
Units: 3  Transfer: CSU  
Advisory: Completion of Bio.Sci. 14 or equivalent strongly recommended  
Hours: 5 (2 lecture, 3 laboratory)  
Introduction to methods for sampling and studying environmental parameters with emphasis on watershed-based ecosystems. Identification of microscopic and macroscopic organisms, especially indicator species, quantitative and qualitative field research techniques and procedures applicable to environmental assessment. Field trips required.
**BIO.SCI. 14 NATURAL HISTORY, ECOLOGY, AND CONSERVATION**

Units: 4  
Transfer: CSU/UC

Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended

Hours: 6 (3 lecture, 3 laboratory)

Introduction to observational biology and environmental concepts. Study of biology and ecology of organisms and ecosystems of the world. Special focus on significance of functioning ecosystems and relevancy of human influence on biological environment. Laboratory hours partially fulfilled by required field trips.

**BIO.SCI. 15 MARINE BIOLOGY**

Units: 4  
Transfer: CSU/UC

Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended

Hours: 6 (3 lecture, 3 laboratory)

Introduction to the biology and ecology of the marine environment. Includes basic biological and ecological principles as applied to major saltwater environments. Stresses conservation and appropriate utilization of marine resources. Designed for both science and non-science majors. Laboratory hours partially fulfilled by required field trips.

**BIO.SCI. 16 FIELD STUDIES IN BIOLOGY**

Units: .5-.5 (varies with each subtitle)  
Transfer: CSU

Hours: As scheduled (varies with each subtitle)

Designed to cover field study activities and topics relevant to biology not covered by regular catalog offerings. Field studies in biology courses provide information and hands-on experiences at selected sites which best demonstrate the biological principles being studied. Topics and places will vary with each subtitle. See class schedule for current semester’s offerings. Each subtitle may be taken once (except Bio.Sci. 16G and Bio.Sci. 16Q).

**BIO.SCI. 16A LOCAL ECOSYSTEMS OF PLACER COUNTY**

Units: .5  
Transfer: CSU

This course is an introduction to local natural areas and their inhabitants. Selected ecosystems in Placer County will be investigated in the field to identify and study its characteristic plants and animals and discover their relationships with the physical environment. Specific study sites may vary. See class schedule or contact department.

**BIO.SCI. 16B LOCAL ECOSYSTEMS OF NEVADA COUNTY**

Units: .5  
Transfer: CSU

Selected ecosystems within Nevada County will be investigated in the field to identify and study its characteristic plants and animals and discover their relationships with the physical environment. Specific study sites may vary—see class schedule or contact department. This class is an introduction to local natural areas and their inhabitants.

**BIO.SCI. 16C VERNAL POOLS AND THE CALIFORNIA PRAIRIE**

Units: .5  
Transfer: CSU

Explores the unique biology and the effects of human history upon the ecology of California’s Great Valley. Emphasizes how special habitats such as Vernal Pools, Valley Riparian Forest, and Native Valley Grasslands have been changed by humankind. Local species of plants and animals are identified in the field at selected sites.

**BIO.SCI. 16D BIOLOGY OF WATERFOWL AND MARSH BIRDS**

Units: .5  
Transfer: CSU

Field experience with identification and observation of marsh birds (primarily ducks, geese, hawks, perching and shore birds). Includes general waterfowl biology and ecology. Emphasizes migration, reproductive cycles, current population trends, and habitat needs. Operational needs and conflicts of our national and local wildlife refuge system are investigated and discussed.

**BIO.SCI. 16E ECOLOGY OF THE SIERRAN CONIFER FOREST**

Units: .5  
Transfer: CSU

Introduction to forest biology/ecology, emphasizing interrelationships between the Sierran forest inhabitants (animals, plants, fungi) and their environment. Study sites include a variety of forest and other associated mountain ecological communities. Depending on season offered, special topics may include: fungi biology, wildflower ecology, tree anatomy, forest nutrient cycles, forest birds, and soil organisms.

**BIO.SCI. 16F FIELD PALEONTOLOGY AND ANCIENT ENVIRONMENTS (ALSO GEOLOGY 16G)**

Units: 1-4  
Transfer: CSU

Investigations into the ecology of environments in the geologic past through field work at fossil sites. Comparisons/contrasts made between ancient (fossil) communities and the current (living) communities of selected study sites. Differences and similarities between the plants and animals will be used as evidence to reconstruct ancient ecological communities. May be taken four times for credit.

**BIO.SCI. 16H ECOLOGY OF THE MENDELOCINO COAST**

Units: 1  
Transfer: CSU

As an example of the Northern California Coast, this field class explores the coastal terrestrial environments in the Fort Bragg/Mendocino area. It investigates coastal communities: redwood (riparian), pygmy, mixed evergreen and closed-cone pine forests; tidepool, sandy beach and dune, prairie and scrub shoreline communities. Plants, animals, natural relationships, environmental factors and man’s influence is assessed for each ecological community examined.
**BIO.SCI. 16I BIOLOGY OF MONO LAKE AND THE GREAT BASIN**

**Units:** 1  
**Transfer:** CSU

Ecological investigations into the unique ecosystem of the Mono Lake/Bodie area of the Great Basin Desert. Its ecology and history will be used to comprehend the current biological and political status of this special habitat. Field work will emphasize the region's terrestrial and aquatic animals, plants, geology, unique species, ecological importance, man's influence, and current use.

**BIO.SCI. 16J BIOLOGY OF POINT REYES NATIONAL SEASHORE**

**Units:** 1  
**Transfer:** CSU

From the cliffs below the lighthouse to the inner coastal woodlands and forest, the National Seashore provides a rich coastal laboratory to study the interaction between life forms, their habitats, and man’s activities. Coastal habitats covered are grasslands, mudflats, forest, marsh, cliffs, tidepools, beach, and dunes. Depending on season offered, emphasis may include wildflowers, owls, and other birds or large mammals.

**BIO.SCI. 16K FOOTHILL ECOLOGY OF THE SIERRA NEVADA**

**Units:** 1.5  
**Transfer:** CSU

Field biology examining the processes of seasonal change, biological responses to change, and the composition of local biological communities: identification of local animals, plants (spring wildflowers), and unique ecological islands (Pine Hill, Table Mountain, Ione, and Calaveras Big Trees). Study sites range from the 100 to the 6,000 foot elevation between Chico (Bidwell Park) and Yosemite National Park. Includes human history, influence, and use of this region. (Attendance on both field trips required for course completion.)

**BIO.SCI. 16L CALIFORNIA WATERWAYS (RIPARIAN AND AQUATIC BIOLOGY)**

**Units:** 1.5  
**Transfer:** CSU

Beginning explorations into the biology/ecology of aquatic environments west of the Sierra Nevada crest. This field class examines organisms living in association with the water cycle and surveys a variety of aquatic/riparian habitats: springs/meadows/bogs, lakes, ponds, vernal pools, streams, rivers, deltas, bay/estuaries, and fresh and salt marshes as observed at selected sites from Lake Tahoe to San Francisco Bay. Man's current and historical associations with these and nearby environments will be highlighted. (Attendance on both field trips required for course completion.)

**BIO.SCI. 16M MARINE MAMMALS AND BIRDS**

**Units:** 1.5  
**Transfer:** CSU

Introduction to the biology and ecology of marine mammals and marine birds. Both shore and pelagic organisms are discussed, emphasizing California-associated species. Field and lecture topics include: adaptations, behavior, reproduction, distribution, anatomy, physiology, identification, evolution, ecology, and current status of whales, elephant seals, true and eared seals, sea otters, bay and shore birds, and sea birds.

**BIO.SCI. 16N MODOC PLATEAU ECOLOGY**

**Units:** 1.5  
**Transfer:** CSU

Field ecology of the volcanic landscapes found in the Modoc Plateau region of California/Oregon. Relationships between the physical environment and Modoc ecosystems will be stressed. Special areas of study include introductions to man’s historic and current influences, forest ecology and forestry practices, abiotic factors, volcanic geology in forming landscapes, primary succession, and fresh-water marsh/waterfowl ecology. Study sites include Lava Beds National Monument and Tule Lake Wildlife Refuge.

**BIO.SCI. 16O HIGH SIERRA AND WHITE MOUNTAIN ECOLOGY**

**Units:** 2  
**Transfer:** CSU

Field biology class contrasting the high elevation ecology of mountain ecosystems, specifically of the Sierra Nevada and White/Inyo Ranges. Mountain habitats: upper Sierran forest, meadows, subalpine forest, alpine fields, and aquatic areas are emphasized. Special topics covered include Bristlecone forest, high altitude adaptations (plants and animals), effects of human activities on fragile ecosystems, vertical organization of life zones, etc. (Ability to hike and moderate backpacking may be required.)

**BIO.SCI. 16P DEATH VALLEY AND DESERT ECOSYSTEMS**

**Units:** 2  
**Transfer:** CSU

Examines the ecosystems of Death Valley National Monument and nearby desert study sites. Extreme differences of elevation from high mountains to below sea level (valley floor) provide a rich variety of physical environments, and desert plants and animals to study. Field work will emphasize identification of animals (insects, reptiles, birds, and mammals) and plants (unique desert families); their special physical and behavioral adaptations to the harsh desert climate and habitats; and man's affects upon the fragile desert ecosystems.
BIO.SCI. 16Q ECOLOGY OF MID-WESTERN NORTH AMERICA
Units: 2  Transfer: CSU
Introduction to the ecology/biology of the major mid-western biomes and life zones emphasizing high desert, forests, and grasslands. The biology of characteristic animals and plants will be highlighted and contrasted to native California species. Variety of biomes, their composition, distribution, relationships, abiotic factors and long-term changes (due to climate and geological factors) will be investigated. Fossil and other evidence of past environments will be compared to present communities. May be taken three times for credit.

BIO.SCI. 16R CANYON LANDS OF THE SOUTHWEST
Units: 2  Transfer: CSU
Field class exploring the wetlands, forest, and deserts of the Grand Canyon and nearby natural areas. Identification, distribution, and adaptation of local and unusual species (plants and animals) living in association with canyon topography. Topography variation (canyon vs. range land forms) as a source of unique microenvironments existing within an overall semi-arid climate type. Principles and practices of land and resource management and its effects on natural systems investigated. Ecology and management of the Colorado River contrasted to local rivers in California.

BIO.SCI. 16T COASTAL HABITATS OF NORTHERN CALIFORNIA
Units: 2  Transfer: CSU
Biological and ecological survey of the special features of the California coast between Prairie Creek Redwoods National Park (Humboldt area) and Point Reyes National Seashore (Marin area). Terrestrial ecosystems in association with the coastline will be emphasized, including aspects such as climate, geology, ecology, and species diversity of each ecosystem examined. Marine habitats (tidepools and mudflats), redwood and mixed evergreen forest, coastal scrub and beach (dune), and special habitats will be studied, identifying local plants and animals and the relationships between them. The human impacts of a growing population upon the natural environments will be observed and discussed.

BIO.SCI. 16U COASTAL HABITATS OF CENTRAL CALIFORNIA
Units: 2  Transfer: CSU
Biological and ecological survey of the special features of the California coast between Monterey (Big Sur area) and Point Reyes National Seashore. Local ecological communities will be observed, identifying coastal plants, animals, and geology, and emphasizing the interrelationships characteristic of coastal environments. Environments studied include sandy beach and dune, tidepool and mudflat, redwood and closed-cone pine forests, inner coast mountains (oak woodland, evergreen forest), grasslands and scrub, etc. Areas will be contrasted with other coastal regions. Human impacts and living styles will be viewed as they effect the natural environments.

BIO.SCI. 16V DESERTS OF SOUTHERN CALIFORNIA
Units: 2  Transfer: CSU
Emphasizes animal and plant adaptations to “hot” desert life (especially reptiles, birds, mammals, and flowering plants) and an introduction to identification and classification of desert plants. A variety of Southern California’s “hot” desert and coastal succulent scrub locations (ecological communities) will be explored, including Joshua Tree National Monument, Mojave, Salton Sea, and Anza-Borrego State Park. Special topics to be discussed include affects of environmental pressures, variation in physical environments, and man’s influence.

BIO.SCI. 16W BIOLOGY OF PACIFIC NORTHWEST AND THE CASCADES
Units: 2  Transfer: CSU
Introduction to the biology of the Pacific Northwest Rain Forest, coastal and mountain environments of Washington and Oregon. The cool rain forest of Olympic Peninsula, Cascade Mountains (Mt. Rainier, Mt. Saint Helens, etc.) provides a source of rich and unique plants, animals, and environments to study. Largely due to different climate, volcanic soils, changing landscapes, and other factors, the biology of these areas produces complex layers of life and abundant wildflowers and other organisms to study (compare and contrast). Special topics include autotrophic succession, distribution of tidepool life along coast, plants and climate of the cool rain forest, and ecosystems of the Cascade Mountains.

BIO.SCI. 16Y ECOLOGY OF SELECTED WILDERNESS ECOSYSTEMS
Units: 2  Transfer: CSU
A field study of selected wilderness sites, comparing their biological inventory (plants and animals), ecological relationships, physical environments, and sensitivity to human interactions and activities. Both qualitative and quantitative field survey techniques will be used to record ecological data at each study site. Management techniques, history, and objectives of wilderness preservation and resource use conflicts will be emphasized.

BIO.SCI. 16Z ECOLOGY OF THE AMERICAN RIVER
Units: .5  Transfer: CSU
Using the American River System as a typical Sierran stream and riparian system, this field class emphasizes the aquatic habitat (stream/river) and the surrounding hillsides (watershed) as an interlocked ecological community dependent upon each other. Relationships between the stream, its bank, flood plain and surrounding terrestrial ecosystems will be stressed. Community investigations will include: identification of plants and animals, introduction to stream geology/geography, nutrient cycles and soil interrelationships, stream hydrology and food webs, and the current and historical influence.
BIO.SCI. 20 CURRENT TOPICS IN BIOLOGY—A FILM/LECTURE SERIES
Units: 1 Transfer: CSU/UC*
Hours: As scheduled for a total of 18 lecture hours
A weekly guest lecture and/or film series on topics of current interest in the field of biology. Designed as an enrichment course for students majoring in biology, health sciences, forestry, agriculture, horticulture, and related fields. May be repeated for credit under different subtitles.

BIO.SCI. 22 INTRODUCTION TO BOTANY
Units: 4 Transfer: CSU/UC*
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
The study of the biology of plants, fungi and selected protists. Includes the structure, function, evolution and ecology of these groups, as well as identification of common and important species. Emphasis on the significance of these species to humanity. Designed for non-science majors. Meets the laboratory science requirement for most general education programs.

BIO.SCI. 23 WILDFLOWER IDENTIFICATION (ALSO ENV.HORT 181)
Units: .5
Hours: As scheduled for a total of 17 hours (5 lecture, 12 laboratory)
Field trip to the local foothills for plant identification, keying, uses, and ecology. Ability to hike moderate distances may be required.

BIO.SCI. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

BIO.SCI. 30 INTRODUCTION TO ORNITHOLOGY
Units: 2 Transfer: CSU/UC*
Hours: As scheduled for a total of 54 hours (27 lecture, 27 laboratory)
Introduction to the identification, biology, and natural history of birds, emphasizing California examples and their interrelationships with humanity. Field trips included.

BIO.SCI. 33 INTRODUCTION TO ZOOLOGY
Units: 4 Transfer: CSU/UC*
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
A survey of the animal kingdom emphasizing functional anatomy, ecology, and natural history of the important groups of animals. Designed for nonscience majors. Meets the laboratory science requirement.

BIO.SCI. 35 INTRODUCTION TO ENTOMOLOGY
Units: 2 Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 (1.5 lecture, 1.5 laboratory)
Emphasizes the importance of insects and their biology, natural history and identification. Usually offered alternate Spring semesters. Recommended for general education students, forestry, agriculture, and elementary education majors.

BIO.SCI. 36 INTRODUCTION TO MAMMALOLOGY
Units: 2 Transfer: CSU
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 (1.5 lecture, 1.5 laboratory)
Emphasis on mammals and their significance to humanity. Topics include: identification; local species; behavioral, structural, and physiological adaptations; ecology and human relationships. Recommended for general education students or other majors interested in mammals.

BIO.SCI. 44 INTRODUCTION TO MICROBIOLOGY
Units: 3 Transfer: CSU/UC*
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 5 (2 lecture, 3 laboratory)
A survey course for nonbiology majors emphasizing important bacteria, fungi, algae, protozoa, and viruses. Meets lab science requirement. Recommended for general education students and especially for home economics, agriculture, and forestry majors. Nursing and allied health majors should take Bio.Sci. 4.

BIO.SCI. 55 GENERAL HUMAN ANATOMY AND PHYSIOLOGY
Units: 4 Transfer: CSU/UC*
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Structure and function of human organ systems. Designed for nonscience majors desiring a basic understanding of the human body. Fetal pigs are dissected in the laboratory. Experiments are performed on models, nonliving systems, and oneself.
**BIO.SCI. 56 BIOLOGY: A HUMAN PERSPECTIVE**

*Units: 3*  
*Transfer: CSU/UC*  
*Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended*  
*Hours: 3 lecture*

Principles of biology emphasizing the human organism, including anatomy, physiology, medicine, research, genetics, evolution, and ecology. Not recommended for Biological Sciences majors. To fulfill a laboratory requirement, Bio. Sci. 56L must be taken concurrently. Not open to those who have completed Bio.Sci. 10, 11, or 55.

**BIO.SCI. 56L BIOLOGY: A HUMAN PERSPECTIVE (LABORATORY)**

*Units: 1*  
*Transfer: CSU/UC*  
*Corequisite: Concurrent enrollment in Bio.Sci. 56*  
*Hours: 3 laboratory*

Optional laboratory course to be taken with Bio.Sci. 56. Topics parallel lecture course.

**BIO.SCI. 95 INTERNSHIP IN BIOLOGICAL SCIENCES**

*Units: .5-4*  
*Transfer: CSU*  
*Corequisite: Concurrent enrollment in Bio.Sci. 56L*  
*Hours: 3 laboratory, 1 internship*

Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

**BIO.SCI. 300 SELECTED TOPICS IN BIOLOGICAL SCIENCES**

*Units: .5-4*  
*Transfer: CSU/UC*  
*Hours: As scheduled for a total of 36 hours (9 lecture, 27 laboratory)*

Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

**BIO.SCI. 601 BASIC LABORATORY SKILLS IN MICROBIOLOGY**

*Units: 1 (Non-Degree Credit)*  
*Hours: As scheduled for a total of 36 hours (9 lecture, 27 laboratory)*

Provides training in basic laboratory skills used in the biological sciences including aseptic technique, record keeping, observation (macro and microscopic), taxonomy, recombinant DNA techniques and proper use of laboratory equipment. Not recommended for Bio.Sci. majors. (Credit/No Credit Grading)

**BIO.SCI. 603 DNA BIOTECHNOLOGY LAB SKILLS**

*(Inactive 3-1-06)*

**Business**

**BUSINESS & TECHNOLOGY**

*DEAN: Stephanie Guevara*  
*DIVISION OFFICE: B 3*  
*FACULTY: E. Bienvenue, C. Dunn, K. Heisinger, S. Lolland, T. Read, L. Sanchez*  
*liaison COUNSELORS: E. Dickson, B. Hawkes, T. Maddux, Reyes Ortega, K. Parker*

The business discipline offers training in seven major areas: Accounting, Business Administration, General Business, Management, Marketing, Small Business, and Administrative Professional. For Computer Information Systems, Computer Science, and Real Estate see separate catalog listings. The Business Division plays a vital role in preparing students for their vocational careers. Experience has demonstrated the importance of a background in general education for all students planning a career in business.

**TRANSFER MAJOR REQUIREMENTS** in Business Administration are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and Counseling Center. Some positions for which graduates from state colleges and universities in Business Administration are qualified are in Accounting, Finance, Management, Marketing, and Business Teacher Education.

A.A. and A.S. degrees can be earned in the major areas of business. Also some transfer majors may earn A.A./A.S. degrees. Certificates can be earned in some areas of business.

**ACCOUNTING—A.A. OR A.S. DEGREE OR CERTIFICATE**

Successful completion of the curriculum in accounting prepares students for positions as accounting clerks, bookkeepers, payroll clerks or entry-level accountants. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>Business 1 Financial Accounting I</td>
<td>3</td>
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<tr>
<td>Business 2 Financial Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>Business 3 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Business 9 Federal Income Taxation of Individuals</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 10 Introduction to Computing OR</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 50 Applying Computer Software</td>
<td>3</td>
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<tr>
<td>C.I.S. 80 Spreadsheets in a Business Environment</td>
<td>3</td>
</tr>
</tbody>
</table>

**PLUS 3 ADDITIONAL UNITS FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Business 8 Computerized Accounting for Windows</td>
<td>3</td>
</tr>
<tr>
<td>Business 20 Introduction to Business</td>
<td>3</td>
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<tr>
<td>Business 48 Business Law</td>
<td>3</td>
</tr>
<tr>
<td>Business 64 Business Mathematics</td>
<td>3</td>
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</tbody>
</table>

**TOTAL UNITS REQUIRED: 21**
**ADMINISTRATIVE PROFESSIONAL—A.A. OR A.S. DEGREE OR CERTIFICATE**  
(FORMERLY OFFICE TECHNOLOGY—ADMINISTRATIVE SUPPORT CONCENTRATION)

Successful completion of the curriculum for the administrative professional qualifies students for entry-level positions requiring skills and abilities to provide administrative support for businesses and similar organizations. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

### REQUIRED CORE COURSES

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Business 20 Introduction to Business</td>
<td>3</td>
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<tr>
<td>Business 84 Introduction to Business Writing Skills</td>
<td>3</td>
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<tr>
<td>Business 90 Office Systems and Procedures</td>
<td>3</td>
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<tr>
<td>Business 102 Management Communications</td>
<td>3</td>
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<tr>
<td>C.I.S. 50 Applying Computer Software</td>
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<tr>
<td>C.I.S. 70 Word Processing—Beyond the Basics</td>
<td>3</td>
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</tbody>
</table>

**PLUS A MINIMUM OF 3 ADDITIONAL UNITS FROM:**

- Business A Elements of Accounting OR
- Business 1 Financial Accounting I.                                  | 3     |
- Business 64 Business Mathematics                                     | 3     |
- Business 85 Introduction to Oral Communication                       | 3     |
- Business 86 Written Communications for Business                      | 3     |
- C.I.S. 80 Spreadsheets in a Business Environment                     | 3     |
- C.I.S. 90 Database Management                                        | 3     |

**TOTAL UNITS REQUIRED:** 21

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**BUSINESS ADMINISTRATION—A.A. OR A.S. DEGREE**

The A.A. or A.S. degree in Business Administration is primarily for students who plan to transfer with a business major. See a counselor for specific transfer requirements. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>Business 1 Financial Accounting I.</td>
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<td>Business 2 Financial Accounting II.</td>
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<tr>
<td>Business 3 Managerial Accounting</td>
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<tr>
<td>C.S. 10 Introduction to Computing OR</td>
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</tr>
<tr>
<td>C.I.S. 50 Applying Computer Software</td>
<td>3</td>
</tr>
<tr>
<td>Business 48 Business Law OR</td>
<td>3</td>
</tr>
<tr>
<td>Econ. 1B Fundamentals of Economics</td>
<td>3</td>
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<tr>
<td>Econ. 1A Fundamentals of Economics OR</td>
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<tr>
<td>Econ. 1B Fundamentals of Economics</td>
<td>3</td>
</tr>
<tr>
<td>Math. 20 Finite Mathematics OR</td>
<td></td>
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<tr>
<td>Math. 42 Business Calculus OR</td>
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<tr>
<td>Math. 13 Elementary Statistics</td>
<td>3-4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 21-22

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**BUSINESS ENTREPRENEURSHIP—A.A. OR A.S. DEGREE OR CERTIFICATE**  
(FORMERLY SMALL BUSINESS)

The Business Entrepreneurship curriculum prepares students to be owners, managers or employees in small to mid-size businesses. This program also serves as a business foundation for students seeking careers in entrepreneurial pursuits or small business development. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Business B Accounting and Finance for the Small Business Owner OR</td>
<td>3</td>
</tr>
<tr>
<td>Business 1 Financial Accounting I.</td>
<td>3</td>
</tr>
<tr>
<td>Business 20 Introduction to Business</td>
<td>3</td>
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<tr>
<td>Business 28 Independent Study OR</td>
<td>3</td>
</tr>
<tr>
<td>Business 95 Internship in Business</td>
<td>1-3</td>
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<tr>
<td>Business 102 Management Communications</td>
<td>3</td>
</tr>
<tr>
<td>Business 120 Introduction to Marketing</td>
<td>3</td>
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<tr>
<td>Business 140 Small Business Management</td>
<td>3</td>
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</tbody>
</table>

**PLUS A MINIMUM OF 6 ADDITIONAL UNITS FROM:**

- Business 48 Business Law.                                           | 3     |
- Business 85 Introduction to Oral Communication                       | 3     |
- Business 86 Written Communications for Business                     | 3     |
- Business 106 Conducting Effective Interviews                        | 1     |
- Business 107 Coaching and Motivating Employees                      | 1     |
- Business 108 Managing Workplace Conflict                            | 1     |
- Business 109 Evaluating Employee Performance                        | 1     |
- Business 110 Disciplining Employees                                 | 1     |
- C.I.S. 50 Applying Computer Software                                | 3     |

**TOTAL UNITS REQUIRED:** 22-24

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**GENERAL BUSINESS—A.A. OR A.S. DEGREE OR CERTIFICATE**

Successful completion of the curriculum in general business prepares students for entry-level positions in business. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Business A Elements of Accounting OR</td>
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<tr>
<td>Business 1 Financial Accounting I.</td>
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<tr>
<td>Business 20 Introduction to Business</td>
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<tr>
<td>Business 48 Business Law.</td>
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<tr>
<td>Business 64 Business Mathematics</td>
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<tr>
<td>Business 85 Introduction to Oral Communication</td>
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<tr>
<td>Business 102 Management Communications</td>
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<tr>
<td>C.I.S. 50 Applying Computer Software</td>
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<tr>
<td>C.S. 10 Introduction to Computing OR</td>
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**PLUS 6 ADDITIONAL UNITS FROM:**

- Business 8 Computerized Accounting for Windows                      | 3     |
- Business 49 Law and Society                                          | 3     |

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### BUSINESS

#### BUSINESS COURSES

**BUSINESS A ELEMENTS OF ACCOUNTING**

**(FORMERLY BUS. A)**

**Units:** 3  
**Hours:** 3 lecture  

An introductory course for students without previous study in bookkeeping or accounting. Provides practical skills for individuals to hold bookkeeping or accounting clerk positions; also appropriate for business owners, managers, administrative assistants and others needing practical knowledge of basic accounting. Includes basic accounting principles, banking procedures, payroll, internal controls, and financial statement analysis. May not be taken concurrently with BUSINESS 1.

**BUSINESS B ACCOUNTING AND FINANCE FOR THE SMALL BUSINESS OWNER**

**Units:** 3  
**Hours:** 3 lecture  

Practical study of the accounting and financial management methods essential for the efficient operation of small businesses. Provides entrepreneurs with skills to prepare and analyze financial statements, understand the accounting cycle, prepare financial projections and manage cash flow, accounts receivable, accounts payable and inventory.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>REQUIRED COURSES</strong></td>
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<tr>
<td>Business 20 Introduction to Business</td>
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<tr>
<td>Business 120 Introduction to Marketing</td>
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<td>Business 121 Advertising</td>
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<td>Business 123 Retailing</td>
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<td>Business 124 Selling Dynamics</td>
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<tr>
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<td><strong>PLUS 6 ADDITIONAL UNITS FROM:</strong></td>
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<tr>
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<tr>
<td>Business 48 Business Law</td>
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<tr>
<td>Business 64 Business Mathematics</td>
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<tr>
<td>Business 100 Management Concepts and Applications</td>
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<tr>
<td>Business 122 Marketing in the Digital Age</td>
<td>3</td>
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<tr>
<td>C.S. 10 Introduction to Computing OR C.I.S. 50 Applying Computer Software</td>
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</tbody>
</table>

**TOTAL UNITS REQUIRED: 21**

### MANAGEMENT—A.A. OR A.S. DEGREE OR CERTIFICATE

The curriculum in Management prepares students for entry-level management positions. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>REQUIRED COURSES</strong></td>
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</tr>
<tr>
<td>Business A Elements of Accounting OR Business 1 Financial Accounting I</td>
<td>3</td>
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<tr>
<td>Business 20 Introduction to Business</td>
<td>3</td>
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<tr>
<td>Business 48 Business Law OR Business 49 Law and Society</td>
<td>3</td>
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<tr>
<td>Business 100 Management Concepts and Applications</td>
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<tr>
<td>Business 102 Management Communications</td>
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<td></td>
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<tr>
<td>Business 112 Employment Law for Supervisors</td>
<td>1</td>
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<tr>
<td>Business 140 Small Business Management</td>
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<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>PLUS 3 ADDITIONAL UNITS FROM:</strong></td>
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<tr>
<td>Business 105 The New Supervisor OR Business 106 Conducting Effective Interviews</td>
<td>1</td>
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<tr>
<td>Business 107 Coaching and Motivating Employees</td>
<td>1</td>
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<td>Business 108 Managing Workplace Conflict</td>
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<td>Business 109 Evaluating Employee Performance</td>
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<tr>
<td>Business 110 Disciplining Employees</td>
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<tr>
<td>Business 111 The Supervisor as a Team Leader</td>
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<tr>
<td>Business 120 Introduction to Marketing</td>
<td>3</td>
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<tr>
<td>C.I.S. 50 Applying Computer Software</td>
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</tbody>
</table>

**TOTAL UNITS REQUIRED: 22**

### MARKETING—A.A. OR A.S. DEGREE OR CERTIFICATE

The curriculum in Marketing prepares students for positions as salespersons, business persons, merchandisers, and marketing managers. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>REQUIRED COURSES</strong></td>
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<tr>
<td>Business 84 Introduction to Business Writing Skills</td>
<td>3</td>
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<td>Business 86 Written Communications for Business</td>
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<td></td>
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<tr>
<td>Business 120 Introduction to Marketing</td>
<td>3</td>
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<tr>
<td>C.I.S. 80 Spreadsheets in a Business Environment</td>
<td>3</td>
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<tr>
<td>R.E. 74 Real Estate Principles</td>
<td>3</td>
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</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 24**

### SMALL BUSINESS SKILLS CERTIFICATE

Successful completion of the Small Business skills certificate gives students practical skills to start or purchase, and effectively manage a small business. A skills certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REQUIRED COURSES:</strong></td>
<td></td>
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<tr>
<td>Business B Accounting and Finance for the Small Business Owner</td>
<td>3</td>
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<tr>
<td>Business 48 Business Law</td>
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<td></td>
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<tr>
<td>Business 120 Introduction to Marketing</td>
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<tr>
<td>Business 140 Small Business Management</td>
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</tbody>
</table>

**TOTAL UNITS REQUIRED: 12**

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### BUSINESS

#### BUSINESS COURSES

**BUSINESS A ELEMENTS OF ACCOUNTING**

**(FORMERLY BUS. A)**

**Units:** 3  
**Hours:** 3 lecture  

An introductory course for students without previous study in bookkeeping or accounting. Provides practical skills for individuals to hold bookkeeping or account clerk positions; also appropriate for business owners, managers, administrative assistants and others needing practical knowledge of basic accounting. Includes basic accounting principles, banking procedures, payroll, internal controls, and financial statement analysis. May not be taken concurrently with BUSINESS 1.

**BUSINESS B ACCOUNTING AND FINANCE FOR THE SMALL BUSINESS OWNER**

**Units:** 3  
**Hours:** 3 lecture  

Practical study of the accounting and financial management methods essential for the efficient operation of small businesses. Provides entrepreneurs with skills to prepare and analyze financial statements, understand the accounting cycle, prepare financial projections and manage cash flow, accounts receivable, accounts payable and inventory.
BUSINESS 1 FINANCIAL ACCOUNTING I (FORMERLY BUS. 1)
Units: 3 Transfer: CSU/UC*
Hours: 3 lecture
Forms of business entities; principles of accounting; accounting cycle; recording transactions; preparing and analyzing financial statements; internal controls; bank reconciliation; petty cash; receivables and payables. (With Business 2, CAN BUS 2) (With Business 2 & 3, CAN BUS SEQ A)

BUSINESS 2 FINANCIAL ACCOUNTING II
( FORMERLY BUS. 2)
Units: 3 Transfer: CSU/UC*
Prerequisite: Completion of Business 1 or equivalent
Hours: 3 lecture
Accounting principles; inventories and cost of goods sold; tangible and intangible assets; current and long-term liabilities including bonds; capital stock and treasury stock; analysis of financial statements. (With Business 1, CAN BUS 2) (With Business 1 & 3, CAN BUS SEQ A)

BUSINESS 3 MANAGERIAL ACCOUNTING
( FORMERLY BUS. 3)
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Business 2 or equivalent
Hours: 3 lecture
Managerial accounting principles and concepts; job order and process costing; activity-based costing; cost behavior analysis and contribution margin income statements; operating budgets; standard costs; capital budgets; statement of cash flows and financial statement analysis. (CAN BUS 4) (With Business 1 & 2, CAN BUS SEQ A)

BUSINESS 8 COMPUTERIZED ACCOUNTING
FOR WINDOWS (FORMERLY BUS. 8A & 8B)
Units: 3
Prerequisite: Completion of Business A, or Business 1, or equivalent
Hours: 3 lecture
Introduction to the principles and procedures of accrual accounting using an industry computer accounting program. Accounting applications include general ledger, purchases and accounts payable, sales and accounts receivable, payroll, merchandise inventory, and job costing. Includes completion of the accounting cycle, preparation of financial statements, and analysis of financial statements for service and retail organizations.

BUSINESS 9 FEDERAL INCOME TAXATION OF INDIVIDUALS
( FORMERLY BUS. 65A)
Units: 3 Transfer: CSU
Hours: 3 lecture
Rights and responsibilities of taxpayers under the Internal Revenue Code. Introduction to filing status, exemptions, income exclusions and inclusions, capital gains/losses, itemized deductions, employee business expenses, sale of home, and tax planning.

BUSINESS 19 INVESTMENTS (FORMERLY BUS. 19)
Units: 3 Transfer: CSU
Hours: 3 lecture
An introduction to investment opportunities, principles and practices. Includes investments in government and corporate securities, mutual funds, real estate, and tax advantaged securities.

BUSINESS 20 INTRODUCTION TO BUSINESS
( FORMERLY BUS. 20)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
The fundamentals of function and administration of business entities. Study of ownership and structural forms of business enterprise, promotion and operation, accounts and records, opportunities for employment, and occupational preparation. Aids in selecting a field of business specialization and provides a background for further study.

BUSINESS 28 INDEPENDENT STUDY (FORMERLY BUS. 28)
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

BUSINESS 48 BUSINESS LAW (FORMERLY BUS. 48)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
The law and its relationship to business with an emphasis on evaluating and managing potential legal and ethical problems. Includes contracts and sales, business torts, employment law, business organizations, and the regulatory environment. (CAN BUS 8)

BUSINESS 49 LAW AND SOCIETY (FORMERLY BUS. 16)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to the American legal system, including theoretical and practical perspectives on the relationship of law to individuals and to society. Includes the U.S. Constitution, criminal law system, civil dispute resolution, consumer rights, interpersonal and property rights, and the law of the workplace.
BUSINESS 64 BUSINESS MATHEMATICS
(FORMERLY BUS. 64)
Units: 3
Prerequisite: Placement by matriculation assessment process or completion of Skill Development 582 with a grade of “C” or better
Hours: 3 lecture
A practical application of business mathematics, including fractions, decimals, basic algebraic equations, percentages and their application, cash and trade discounts, markups and markdowns, notes and interest, compound interest, and present value, annuities and sinking funds, depreciation, and basic statistics.

BUSINESS 84 INTRODUCTION TO BUSINESS WRITING SKILLS (FORMERLY BUS. 110)
Units: 3
Prerequisite: Eligibility for English A based on matriculation assessment process or completion of English 501 or E.S.L. 20W with a grade of “C” or better
Hours: 3 lecture
Basic business language skills for a variety of industries and careers. Includes grammar, spelling, punctuation, business vocabulary, correspondence, electronic communication, formats, and use of appropriate business reference materials.

BUSINESS 85 INTRODUCTION TO ORAL COMMUNICATION (FORMERLY BUS. 85)
Units: 3
Advisory: Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended.
Hours: 3 lecture
Introduction to oral communication necessary in workplace and community. Involves verbal/nonverbal techniques, listening skills, group dynamics, interviewing processes, conflict management, research techniques and delivering oral presentations with emphasis on business situations. Build skills through interactive activities in a supportive environment.

BUSINESS 86 WRITTEN COMMUNICATIONS FOR BUSINESS (FORMERLY BUS. 125)
Units: 3
Advisory: Completion of English A, Business 84 or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended.
Hours: 3 lecture
Principles of written communication for a variety of business applications. Practice in writing memorandums, electronic messages, reports, proposals and business letters. Application exercises include inquiry, claim, informational, credit, collection, and sales letters, and resume writing. Emphasis on format, content and structure of business writing development.

BUSINESS 90 OFFICE SYSTEMS AND PROCEDURES
(FORMERLY BUS. 124)
Units: 3
Transfer: CSU
Prerequisite: Completion of Business 84 and Business 102 or equivalent courses
Advisory: Completion of C.I.S. 50 or equivalent recommended
Hours: 3 lecture
Introduces administrative systems and procedures used to process information in the workplace. Organizational concepts, records management, decision making, communication systems, effective business relationships, time management, financial recordkeeping, ethics, career opportunities, and teamwork skills emphasized.

BUSINESS 95 INTERNSHIP IN BUSINESS
(FORMERLY BUS. 95 and MKT. 95)
Units: .5-4
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of accounting, finance, marketing, retail, management, or other business functions. Provides new on-the-job technical training under the direction of a worksite supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

BUSINESS 100 MANAGEMENT CONCEPTS AND APPLICATIONS (FORMERLY MGT. 1)
Units: 3
Transfer: CSU
Hours: 3 lecture
A foundation course that explores supervision concepts with a contemporary perspective. Includes the four management functions of planning, controlling, leading, and organizing, with emphasis on practical application of skills in communication, leadership, decisions-making, staffing, motivation, delegation, and team-building to supervise others. Students are given opportunities to apply newly acquired ideas and techniques to workplace situations.

BUSINESS 102 MANAGEMENT COMMUNICATIONS
(FORMERLY MGT. 5)
Units: 3
Transfer: CSU
Hours: 3 lecture
Management written and oral communication principles and techniques for business. Organizing and writing business correspondence for internal and external use. Practice in impromptu speaking, training presentations, interviewing and listening. Includes meeting management techniques, employee counseling, and management documentation.
BUSINESS 105 THE NEW SUPERVISOR  
(FORMERLY MGT. 200)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Opportunities and challenges of becoming a new supervisor; contemporary roles of the supervisor; skills, functions, and activities of management; importance of organizational culture; managing change; and personal management skills.

BUSINESS 106 CONDUCTING EFFECTIVE INTERVIEWS  
(FORMERLY MGT. 205)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Overview of recruitment and selection processes organizations use to screen and select applicants for employment. Job analysis, oral interviews, and specific strategies for hiring.

BUSINESS 107 COACHING AND MOTIVATING EMPLOYEES  
(FORMERLY MGT. 210)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Motivational work environments and why such environments are important for productivity. Concepts include coaching, goal setting and unmotivated employees. Practical approaches used by organizations.

BUSINESS 108 MANAGING WORKPLACE CONFLICT  
(FORMERLY MGT. 215)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Nature, causes, and levels of conflict in the workplace. Practical techniques for detecting, understanding, and resolving or managing conflict in positive ways; reactive and proactive solutions; conflict orientations and situations appropriate to their use; collaborative problem solving.

BUSINESS 109 EVALUATING EMPLOYEE PERFORMANCE  
(FORMERLY MGT. 220)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Supervisor’s role in preparing and conducting performance evaluations, formal and informal approaches, common methods, effective performance discussions and employee development.

BUSINESS 110 DISCIPLINING EMPLOYEES  
(FORMERLY MGT. 225)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Supervisor’s role in performance counseling and discipline. Appropriate procedures for progressive discipline. Applying discipline principles including conducting investigations and writing documentation.

BUSINESS 111 THE SUPERVISOR AS A TEAM LEADER  
(FORMERLY MGT. 240)  
Units: 1  
Hours: As scheduled for a total of 18 lecture hours  
Team approaches for working toward organizational goals through effective leadership. Includes leadership principles, roles and behaviors of team development, and work processes that encourage team oriented work.

BUSINESS 112 EMPLOYMENT LAW FOR SUPERVISORS  
(FORMERLY MGT. 25)  
Units: 1  
Transfer: CSU  
Advisory: Completion of Business 100 or equivalent recommended  
Hours: As scheduled for a total of 18 lecture hours  
Introduction to the employment rights and responsibilities of employers and employees in all sectors of the economy. Includes legal aspects of hiring, discrimination, wage and hour, benefits, and health and safety.

BUSINESS 120 INTRODUCTION TO MARKETING  
(FORMERLY MKT. 1)  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
The fundamental concepts, relationships, and structure necessary for an overall understanding of the field of marketing. Includes identifying and selecting target markets, understanding consumer behavior, and making product, pricing, distribution, and promotion decisions.

BUSINESS 121 ADVERTISING (FORMERLY MKT. 30)  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
Principles and practices of effective advertising. Marketing research, consumer behavior, target marketing, and media strategy are examined as tools for effective advertising. Creative methods and strategies are examined for the development of various types of advertising.

BUSINESS 122 MARKETING IN THE DIGITAL AGE  
(FORMERLY MKT. 50)  
Units: 3  
Transfer: CSU  
Advisory: Completion of Business 120 and C.I.S. 37 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Exploration of effective marketing techniques using the tools available in an evolving world of technology and digital information. Emphasis on marketing on the internet.
BUSINESS 123 RETAILING (FORMERLY MKT. 10)
Units: 3  Transfer: CSU
Hours: 3 lecture
Concepts and principles involved in making decisions for retail firms. Sales methods, customer relations, store organization, principles of pricing, visual merchandising, buying and advertising will be covered. Brick and mortar stores, catalogs, home shopping networks, and E-retailing will be examined.

BUSINESS 124 SELLING DYNAMICS (FORMERLY MKT. 40)
Units: 3  Transfer: CSU
Hours: 3 lecture
Introduction to communication skills and practical techniques needed in professional selling. Emphasizes the history, career, rewards, and duties of a professional sales consultant. Illustrates the importance of the sales function to the organization's success. Examines the social, ethical, and legal issues of selling.

BUSINESS 140 SMALL BUSINESS MANAGEMENT
(FORMERLY MGT. 50)
Units: 3  Transfer: CSU
Hours: 3 lecture
Practical aspects of starting, buying and managing a small business. Focus on home-based, service, “bricks and mortar,” and e-businesses; forms of ownership, franchising, and preparing a business plan; financing a business; accounting; marketing fundamentals; managing human resources; technology; insurance; networking and communications.

BUSINESS 300 SELECTED TOPICS IN BUSINESS
(FORMERLY BUS. 300)
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

BUSINESS 400 SELECTED TOPICS IN BUSINESS
(FORMERLY BUS. 400)
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Chemistry

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: D. Burns, F. Cardoza, K. Clemens, P. Gamel, M. Springsteel, B. Vanderbout
LIAISON COUNSELORS: B. Hawkes, T. Maddux, S. Muraki

The Chemistry program at Sierra College is designed to meet the needs of the diverse community of interests served by the community college. A full program of chemistry for the professional scientist is offered through analytical chemistry and a two-semester course in organic chemistry. A separate track is offered for nursing students that presents general inorganic, organic, and biochemistry in a one-year sequence. The Chemistry Department also has a strong commitment to the student with no prior chemistry, or to those whose background is weak.

The entire program is taught with a strong emphasis on the laboratory. In the more advanced classes, students receive hands-on experience with a wide variety of instruments.

TRANSFER MAJOR REQUIREMENTS in Chemistry are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Chemistry are qualified are in research, industry, education, engineering, and the allied medical fields.

CHEMISTRY—A.S. DEGREE

The Chemistry major recognizes a concentration in the field of Chemistry. Successful completion of the curriculum in Chemistry and the associated electives prepare Chemistry students for transfer to four-year colleges or universities. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43. Courses used to satisfy this major may not be used to satisfy General Education Requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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<tr>
<td>Chem. 1A General Chemistry OR</td>
<td>5-6</td>
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<tr>
<td>Chem. 3A-3B General Chemistry</td>
<td>5-6</td>
</tr>
<tr>
<td>Chem. 1B General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Chem. 5 Quantitative Analysis</td>
<td>4</td>
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<tr>
<td>Chem. 12A-B Organic Chemistry</td>
<td>10</td>
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</table>

TOTAL UNITS REQUIRED: 24-25

Recommended Electives:
Math. 30, 31, 32, Physics 4A, 4B, 4C
CHEMISTRY COURSES

CHEM. A FOUNDATIONS OF COLLEGE CHEMISTRY
Units: 4
Prerequisite: First year high school algebra or Math. A or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
A nontransfer course primarily intended to prepare students for general college chemistry. Includes a brief review of math operations important in chemistry, metric system, formulas, equations, gas laws, and solutions through related lecture and laboratory exercises.

CHEM. 1A GENERAL CHEMISTRY
Units: 5
Prerequisite: High school chemistry or Chem. A or equivalent and second year high school algebra or Math. D or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory)
Introduction to the general principles of chemistry with emphasis upon quantitative relationships. Properties of matter related whenever possible to present concepts of atomic structure and to the periodic table. Includes atomic structure, the mole concept, gas laws, stoichiometry, redox, acid-base theory, equilibrium, and an introduction to modern theories of chemical bonding through related lecture and laboratory exercises. Students enrolling in Chemistry 1A after having completed Chemistry 3A will lose credit for Chemistry 3A. Note: Not open to students who have completed Chem. 3B. Chem. 1A/1B sequence may be started any semester. (CAN CHEM 2)(With Chem. 1B, CAN CHEM SEQ A)

CHEM. 1B GENERAL CHEMISTRY
Units: 5
Prerequisite: Chem. 1A or Chem. 3B or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory)
A continuation of Chemistry 1A. Includes modern theories of bonding, thermodynamics, electro-chemistry, nuclear chemistry, chemical kinetics, and a brief introduction to organic and biochemistry through related lecture and laboratory exercises. Note: Chem. 1A/1B sequence may be started any semester. (CAN CHEM 4) (With Chem. 1A or 3A & 3B, CAN CHEM SEQ A)

CHEM. 1X CHEMISTRY 1A PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Chemistry 1A
Hours: 1 lecture
Optional problem solving course to accompany Chemistry 1A. May be taken once for credit.

CHEM. 1Y CHEMISTRY 1B PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Chemistry 1B
Hours: 1 lecture
Optional problem solving course to accompany Chemistry 1B. May be taken once for credit.

CHEM. 2A INTRODUCTION TO CHEMISTRY
Units: 5
Prerequisite: Completion of one year high school algebra or Math. A or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory)
Designed to meet the requirements for certain nursing, dental hygiene, physical therapy, home economics, agriculture, and forestry programs. (Inorganic Chemistry) An introduction to the fundamental principles of general inorganic chemistry through related lecture and laboratory exercises. (CAN CHEM 6)(With Chem 2B, CAN CHEM SEQ B)

CHEM. 2B INTRODUCTION TO CHEMISTRY
Units: 5
Prerequisite: Completion of Chem. 2A with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory)
Designed to meet the requirements for certain nursing, home economics, agriculture, and forestry programs. (Organic and Biochemistry) A study of the major classes of organic compounds, including nomenclature structure, properties, and isomerism. Emphasizes the chemistry and metabolism of carbohydrates, lipids, and proteins, including nucleo-protein and enzymes through related lecture and laboratory exercises. (CAN CHEM 8)(With Chem. 2A, CAN CHEM SEQ B)

CHEM. 2X CHEMISTRY 2A PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Chemistry 2A
Hours: 1 lecture
Optional problem solving course to accompany Chemistry 2A. May be taken 1 time for credit.
Chemistry Course Progression
CHEM. 3A GENERAL CHEMISTRY
Units: 2-3 Transfer: CSU/UC Asterisk
Prerequisite: Second year high school algebra or Math. D or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory) for 12 weeks, 2 units; 6 (3 lecture, 3 laboratory) 3 units
The first semester of a two-semester course in general chemistry consisting of that material normally included in one semester of Chemistry 1A. This sequence fulfills the prerequisite for Chemistry 1B. Students enrolling in Chemistry 1A after having taken Chemistry 3A will lose credit for Chemistry 3A. (With Chem. 3B, CAN CHEM 2) (With Chem. 3B & 1B, CAN CHEM SEQ A)

CHEM. 3B GENERAL CHEMISTRY
Units: 3 Transfer: CSU/UC Asterisk
Prerequisite: Chem. 3A with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory) The second semester of a two-semester course in general chemistry consisting of that material normally included in one semester of Chemistry 1A. This sequence fulfills the prerequisite for Chemistry 1B. (With Chem. 3A, CAN CHEM 2) (With Chem. 3A & 1B, CAN CHEM SEQ A)

CHEM. 3X CHEMISTRY 3A PROBLEM SOLVING
Units: 1 Transfer: CSU
Corequisite: Concurrent enrollment in Chemistry 3A
Hours: 1 lecture
Optional problem solving course to accompany Chemistry 3A. May be taken once for credit.

CHEM. 3Y CHEMISTRY 3B PROBLEM SOLVING
Units: 1 Transfer: CSU
Corequisite: Concurrent enrollment in Chemistry 3B
Hours: 1 lecture
Optional problem solving course to accompany Chemistry 3B. May be taken once for credit.

CHEM. 5 CHEMISTRY—QUANTITATIVE ANALYSIS
Units: 4 Transfer: CSU/UC
Prerequisite: Chem. 1B or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 8 (2 lecture, 6 laboratory) Theory and techniques of quantitative chemical measurement, including gravimetric, volumetric, and introductory instrumental analysis. Required for all chemistry, chemical engineering, medicine, dentistry, veterinary medicine, and related majors. (CAN CHEM 12)

CHEM. 10 DESCRIPTIVE CHEMISTRY
Units: 3 Transfer: CSU/UC Asterisk
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
An introductory, descriptive course in basic chemistry designed primarily for students not majoring in science. A conceptual, nonmathematical approach, emphasizing applications of chemical principles in the areas of energy, the environment, and health. Partially satisfies the natural sciences requirement. (See Chemistry 11 for laboratory.)

CHEM. 11 PHYSICAL SCIENCE LABORATORY (ALSO PHYSICS 11)
Units: 1 Transfer: CSU/UC Asterisk
Prerequisite: Completion of or concurrent enrollment in Chem. 10 or Physics 10
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 laboratory
A laboratory course designed to provide a variety of individual experiences involving basic concepts and their applications. Continually addresses the question, “Why are things the way they are?”

CHEM. 12A ORGANIC CHEMISTRY
Units: 5 Transfer: CSU
Prerequisite: Chem. 1B or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory) An extensive course in the chemistry of the compounds of carbon, which emphasizes structure, kinetics, thermodynamics, spectroscopy, and synthesis. The laboratory will provide direct experience with the reaction, synthesis, purification, identification, and spectroscopy (IR, UV-VIS, NMR) of organic compounds. This course is required for majors in chemistry as well as many other related fields.

CHEM. 12B ORGANIC CHEMISTRY
Units: 5 Transfer: CSU
Prerequisite: Chem. 12A or equivalent with a grade of “C” or better
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 9 (3 lecture, 6 laboratory) A continuation of Chem. 12A with emphasis shifting more toward application. This final semester also includes extensive consideration of biochemical systems.
CHEM. 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU/UC* Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

CHEM. 601 BASIC LABORATORY SKILLS
(Inactive 3-1-06)

CHEM. 602 ADVANCED LABORATORY SKILLS
(Inactive 3-1-06)

CHEM. 603 DNA BIOTECHNOLOGY LAB SKILLS
(Inactive 3-1-06)

Communication Studies

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: B. Battenberg, J. Bruno, D. DeFoe, M. Williams
LIAISON COUNSELORS: M. Moon, K. Parker, V. Rogers

The Communication Studies program provides an inquiry into the problems and circumstances involved with the sharing and exchange of information and ideas between and among individuals and societies. Communication Studies offers training and skills accepted as necessary for success in public and private life. A broadly based discipline, Communication Studies includes public speaking, interpersonal and group communication, broadcast communication, journalism, graphic design, photography, and multimedia.

Students may transfer as Communication Studies majors to the university level and/or use their background as an introduction to such careers as journalist, broadcast journalist, public information specialist, media researcher, public opinion analyst, script writer, reporter, editor of video, film or print media, governmental staff position, graphic designer, photographer, and multimedia designer.

COMMUNICATION STUDIES—
A.A. OR A.S. DEGREE
GENERAL CONCENTRATION
(FORMERLY ORAL CONCENTRATION)
The A.A./A.S. degree in Communication Studies, General Concentration requires 27-28 units in the major. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

COMMUNICATION STUDIES—
A.A. OR A.S. DEGREE
GRAPHIC DESIGN CONCENTRATION
The A.A./A.S. degree in Communication Studies, Graphic Design Concentration requires 29-30 units in the major. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

PLUS 5-6 ADDITIONAL UNITS FROM:

PLUS 9-10 ADDITIONAL UNITS FROM:

TOTAL UNITS REQUIRED: 27-28
COMMUNICATION STUDIES—
A.A. OR A.S. DEGREE
MULTIMEDIA CONCENTRATION
The A.A./A.S. degree in Communication Studies, Multimedia Concentration requires 27-28 units in the major. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Comm.St. 95 Internship</td>
<td>.5-4</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 29-30**

**COMMUNICATION STUDIES COURSES**

**COMM.ST. 1 FUNDAMENTALS OF PUBLIC SPEAKING**

(Formerly Speech 1A)

**Units:** 3

**Advisory:** Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended

**Hours:** 3 lecture

Basic principles and practice of speaking in public. Emphasis on proficiency in everyday speaking through organized oral presentations done in a conversational, extemporaneous style. Written outlines (or manuscripts) required for all speeches. (CAN SPCH 4)

**COMM.ST. 2 ARGUMENTATION (FORMERLY SPEECH 2)**

**Units:** 3

**Advisory:** Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended.

**Hours:** 3 lecture

A course in argumentation theory and practice including critical evaluation, evidence, and reasoning. Basic principles of argument structure and case building are applied in a variety of formal and informal problem solving and debate situations. (CAN SPCH 6)
COMM.ST. 3 GROUP COMMUNICATION
Units: 3  Transfer: CSU/UC
Advisory: Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended
Hours: 3 lecture
A study of communication in small group situations. Examination of the role of communication in group processes including leadership, decision making, and problem solving. Review of norms, values, conformity and nonconformity, creative and critical thinking, verbal and non-verbal messages, interpersonal communication principles, group diversity and group public presentations.

COMM.ST. 5 COMMUNICATION EXPERIENCE
Units: 3  Transfer: CSU/UC*
Advisory: Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended
Hours: 3 lecture
Basic skills and introduction to concepts needed for effective communication in a variety of settings. Includes practical experiences in interpersonal, intercultural and small group communication. Requires classroom public speaking.

COMM.ST. 7 INTERCULTURAL COMMUNICATION
Units: 3  Transfer: CSU/UC
Advisory: Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended
Hours: 3 lecture
Research, observation and practice of intercultural communication. Develops the quality of relationships interculturally in academic, work, and personal contexts. Introduces the challenges and rewards of intercultural communication in everyday situations.

COMM.ST. 8 INTERPERSONAL COMMUNICATION
Units: 3  Transfer: CSU
Advisory: Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process recommended
Hours: 3 lecture
Investigation of interpersonal communication in theory and practice. Improves knowledge and quality of communication in academic, work and personal relationships.

COMM.ST. 10 SURVEY OF COMMUNICATION STUDIES
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
An introductory survey of the communication field, covering the theoretical study of the development of communication and its interrelationship with society. Includes the history of communication study, communication theory, and overview of interpersonal, intercultural, small group, public, and organizational communication, as well as how communication takes place through the fine arts and mass media.

COMM.ST. 12 VISUAL COMMUNICATION
(ALSO ART/DES. 12)
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Study of visual communication including design principles, aesthetics, visual perception, non-verbal messages, relationship to verbal communication, audience analysis and persuasion. Historical overview of visual media as well as current trends and technology.

COMM.ST. 15 INTRODUCTION TO MASS MEDIA
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Survey of mass media, including radio, television, film, print, the Internet and multimedia. Examines development of these forms of mass media and analyzes how media messages impact culture. Study of the historical, economic, technological, social and political impact of mass media in American society.

COMM.ST. 20 BROADCAST PRESENTATION
Units: 3  Transfer: CSU
Hours: 3 lecture
Introductory course in television broadcast production and presentation covering content development and stylistic concerns in the broadcast studio. Emphasis upon the various audio and video techniques of on camera presentation.

COMM.ST. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.
COMM.ST. 30 PLANNING AND WRITING FOR VISUAL MEDIA
Units: 3 Transfer: CSU
Advisory: Completion of English A or equivalent with a grade of “C” or better or placement by matriculation assessment process
Hours: 3 lecture
Beginning exploration of alternative approaches to critical analysis and development of visual media messages. Emphasis on planning and writing of scripts for various broadcast media applications: public relations, advertising, news, dramatic.

COMM.ST. 31A INTRODUCTION TO VIDEO PRODUCTION (FORMERLY COMM.ST. 31)
Units: 3 Transfer: CSU
Hours: 3 lecture
Introduction to principles, jargon, and techniques of video production and post-production. Guided classroom exercises and projects, including remote (field) system set-ups, video and audio recording, lighting for single camera video shoots, and basic linear and non-linear video editing.

COMM.ST. 31B BROADCAST STUDIO PRODUCTION
Units: 3 Transfer: CSU
Advisory: Completion of Comm.St. 31A
Hours: 3 lecture
Introduction to the basic elements, procedures and techniques of video production in a studio environment. Emphasis on studio cameras, audio, graphics, floor direction and technical directing.

COMM.ST. 95 INTERNSHIP IN COMMUNICATION STUDIES
Units: .5-4 Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

COMM.ST. 300 SELECTED TOPICS IN COMMUNICATION STUDIES
Units: .5-4 Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Computer Information Systems
(ALSO SEE BUSINESS, COMPUTER SCIENCE, COMPUTER SERVICE TECHNOLOGY)

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara
DIVISION OFFICE: B 3
FACULTY: D. Bushnell, C. Dunn, P.J. Elson, M. Prinzing
LIAISON COUNSELORS: K. Bray, B. Havkes

The Computer Information Systems program prepares students for any occupation that involves computer applications, database, technical and customer support services, web authoring/developing, Internet information researcher/architect, and upgrading job skills. The curriculum also provides valuable computer experience and training for students who are enrolled in other disciplines of the College. A.A./A.S. degrees and certificates are offered.

COMPUTER INFORMATION SYSTEMS—A.A. OR A.S. DEGREE OR CERTIFICATE ADMINISTRATIVE TECHNICAL SUPPORT CONCENTRATION
The Administrative Technical Support concentration prepares students for positions as computer applications users, computer applications installers/trainers, and technically oriented administrative personnel. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.I.S. 50 Applying Computer Software</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 60 Windows Operating System</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 67 Foundations for Creating Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 70 Word Processing-Beyond the Basics</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 80 Spreadsheets in a Business Environment</td>
<td>3</td>
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<tr>
<td>C.I.S. 90 Database Management</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 100 Software for Dynamic Presentations</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 105 Microsoft Outlook-Managing Information</td>
<td>3</td>
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</tbody>
</table>

PLUS 3-4 ADDITIONAL UNITS FROM:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.I.S. 15 Keyboarding for Computer Users</td>
<td>1</td>
</tr>
<tr>
<td>C.I.S. 45 Help Desk Concepts</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 95 Internship in Computer Information Systems</td>
<td>5-4</td>
</tr>
<tr>
<td>C.I.S. 115 Software Configuration and Troubleshooting</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 120 Desktop Publishing-Windows Environment</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 127 Creating Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 137 Managing a Successful Web Project</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 150 Careers in the Computer Industry</td>
<td>5</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 27-28
Sierra College Catalog

COMPUTER INFORMATION SYSTEMS—A.A. OR A.S. DEGREE OR CERTIFICATE COMPUTER APPLICATIONS CONCENTRATION
The Computer Applications concentration prepares students for positions as entry-level users of current computer applications including word processing, spreadsheets, and databases. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES
C.I.S. 5 Computer Keyboarding & Word Processing Basics OR
C.I.S. 20 Keyboard Review and Skill Building. 0-3
OR verified equivalent.
C.I.S. 37 Fundamental Internet Techniques & Strategies for College 3
C.I.S. 50 Applying Computer Software 3
C.I.S. 70 Word Processing-Beyond the Basics 3
C.I.S. 80 Spreadsheets in a Business Environment 3
C.I.S. 100 Software for Dynamic Presentations 3

PLUS 3-4 ADDITIONAL UNITS FROM THE FOLLOWING:
C.I.S. 15 Keyboarding for Computer Users 1
C.I.S. 30 Fundamental Computer Concepts & Applications 3
C.I.S. 45 Help Desk Concepts 3
C.I.S. 60 Windows Operating System 3
C.I.S. 67 Foundations for Creating Web Pages 3
C.I.S. 90 Database Management 3
C.I.S. 95 Internship in Computer Information Systems 5-4
C.I.S. 105 Microsoft Outlook-Managing Information 3
C.I.S. 115 Software Configuration and Troubleshooting 3
C.I.S. 120 Desktop Publishing-Windows Environment 3
C.I.S. 127 Creating Web Pages 3
C.I.S. 150 Careers in the Computer Industry 3

TOTAL UNITS REQUIRED: 18-22

COMPUTER INFORMATION SYSTEMS—A.A. OR A.S. DEGREE OR CERTIFICATE COMPUTER SUPPORT CONCENTRATION (FORMERLY HELP DESK CONCENTRATION)
The Computer Support concentration provides students with education in Computer Information Systems with an emphasis in technical customer support services. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES
C.I.S. 45 Help Desk Concepts 3
C.I.S. 50 Applying Computer Software 3
C.I.S. 60 Windows Operating System 3
C.I.S. 67 Foundations for Creating Web Pages 3
C.I.S. 115 Software Configuration and Troubleshooting 3
C.S. 65 Local Area Networks (also C.S.T. 40) 3

PLUS 3-4 ADDITIONAL UNITS FROM THE FOLLOWING:
Business 85 Introduction to Oral Communication 3
Business 90 Office Systems And Procedures 3
Business 100 Management Concepts and Applications 3
C.I.S. 15 Keyboarding for Computer Users 1
C.I.S. 80 Spreadsheets in a Business Environment 3
C.I.S. 90 Database Management 3
C.I.S. 95 Internship in Computer Information Systems OR
C.I.S. 28 Independent Study 3
C.S.T. 25 Personal Computer Configuration & Repair (also C.S.T. 25) 3

TOTAL UNITS REQUIRED: 21-22

COMPUTER INFORMATION SYSTEMS—A.A. OR A.S. DEGREE OR CERTIFICATE INTERNET CONCENTRATION
Successful completion of the Internet concentration prepares students to develop and use Internet business strategies. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES
C.I.S. 50 Applying Computer Software OR
C.I.S. 67 Foundations for Creating Web Pages 3
C.I.S. 105 Microsoft Outlook-Managing Information 3
C.I.S. 127 Creating Web Pages 3
C.I.S. 137 Managing a Successful Web Project 3
C.S. 62 Web Programming I 3

PLUS 3-4 ADDITIONAL UNITS FROM THE FOLLOWING:
Art/Des. 70 Introduction to Digital Art & Design 3
Business 122 Marketing in the Digital Age 3
C.I.S. 15 Keyboarding for Computer Users 1
C.I.S. 90 Database Management 3
C.I.S. 100 Software for Dynamic Presentations 3
C.S. 50 Introduction to UNIX 3
C.S. 52 Introduction to SQL 3
C.S. 63 Web Programming II 3

TOTAL UNITS REQUIRED: 21-22

COMPUTER ESSENTIALS SKILLS CERTIFICATE
Equips students with the essential Windows personal computer skills required for school or business. Helps prepare students for careers or fields of study that require computer use, such as data entry, clerical support, receptionist, or customer service, and may serve as a foundation for acquiring advanced or specialized computer skills. Appropriate for students seeking retraining. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES
C.I.S. 5 Computer Keyboarding and Word Processing Basics OR
C.I.S. 20 Keyboard Review and Skill Building 3

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C.I.S. 30 Fundamental Computer Concepts and Applications ... 3  
C.I.S. 37 Fundamental Internet Techniques & Strategies for College 3  
C.I.S. 50 Applying Computer Software ............................ 3  
C.I.S. 60 Windows Operating System .............................. 3  
**TOTAL UNITS REQUIRED: 15**

**PC CARE SKILLS CERTIFICATE**  
Prepares students to perform basic Windows computer setup, care, maintenance, and troubleshooting with focus on personal computers. Addresses needs to understand and maintain computers. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES** | UNITS  
--- | ---  
C.I.S. 60 Windows Operating System .............................. 3  
C.I.S. 67 Foundations for Creating Web Pages .................... 3  
C.I.S. 115 Software Configuration and Troubleshooting ......... 3  
C.I.E. 25 Personal Computer Configuration and Repair  
(also C.S.T. 25) .................................................. 4  
**TOTAL UNITS REQUIRED: 13**

**MICROSOFT OFFICE SPECIALIST SKILLS CERTIFICATE—CORE LEVEL**  
Helps students prepare for Core Level Microsoft Office Specialist industry certification exams in Word, Excel, Access, and PowerPoint. Prepares students for advancement in the workplace and builds technical proficiency, comprehension of Office applications, and ability to integrate the Office applications. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES** | UNITS  
--- | ---  
C.I.S. 15 Keyboarding for Computer Users ........................ 1  
C.I.S. 30 Fundamental Computer Concepts and Applications ... 3  
C.I.S. 50 Applying Computer Software ............................ 3  
C.I.S. 60 Windows Operating System .............................. 3  
**TOTAL UNITS REQUIRED: 10**

**MICROSOFT OFFICE SPECIALIST SKILLS CERTIFICATE—EXPERT LEVEL**  
Helps students prepare for Expert Level Microsoft Office Specialist industry certification exams in Word, Excel, Access, PowerPoint and Outlook. Students will increase technical proficiency and expertise, overall comprehension of Office applications, ability to use advanced features, and ability to integrate the Office applications with other software applications. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES** | UNITS  
--- | ---  
C.I.S. 70 Word Processing—Beyond the Basics .................... 3  
C.I.S. 80 Spreadsheets in a Business Environment ................ 3  
C.I.S. 90 Database Management .................................... 3  
C.I.S. 100 Software for Dynamic Presentations ................... 3  
C.I.S. 105 Microsoft Outlook—Managing Information .............. 3  
**TOTAL UNITS REQUIRED: 15**

**ONLINE BUSINESS SKILLS CERTIFICATE**  
For those students who want to build skills surpassing those of the typical Internet user. Prepares students to effectively understand and apply the Internet for upgrading business skills including researching and identifying high quality information, applying advanced online business communication and collaboration tools, and publishing or maintaining Web pages with HTML and/or Web editing software. Helps prepare students for careers as research/reference coordinators, customer service coordinators, and Internet content coordinators, as well as for educational advancement. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES** | UNITS  
--- | ---  
C.I.S. 37 Fundamental Internet Techniques & Strategies for College 3  
C.I.S. 60 Windows Operating System .............................. 3  
C.I.S. 67 Foundations for Creating Web Pages .................... 3  
C.I.S. 105 Microsoft Outlook—Managing Information .............. 3  
**TOTAL UNITS REQUIRED: 12**

**WEB PAGE EDITOR SKILLS CERTIFICATE**  
Assists in preparing students for entry level positions on a Web team or upgrades and expands existing office skills. Students will apply skills to edit web sites using HTML, Web page editing software, imaging, and animation programs; assist in the production of professional web sites; maintain or update an organization’s existing web site; create small business web sites. Helps prepare students for careers in Web Production Support. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES** | UNITS  
--- | ---  
C.I.S. 67 Foundations for Creating Web Pages .................... 3  
C.I.S. 100 Software for Dynamic Presentations ................... 3  
C.I.S. 127 Creating Web Pages .................................... 3  
Art/Des. 65 Capturing Digital Images ............................. 1  
Art/Des. 85 Web Design ......................................... 3  
**TOTAL UNITS REQUIRED: 13**
WEB SITE PRODUCTION SKILLS CERTIFICATE
Helps prepare students for positions as a Web site producer or production assistant. This certificate features practical business experience in the form of an internship. Students will learn to assist in the production and management of new Web projects and site re-designs. Strategize small business Web projects from initial idea through planning, design, implementation, promotion and maintenance. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>C.I.S. 95</td>
<td>Internship in Computer Information Systems OR Art/Des. 95 Internship in Applied Art and Design</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 127</td>
<td>Creating Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>C.I.S. 137</td>
<td>Managing a Successful Web Project</td>
<td>3</td>
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<tr>
<td>Art/Des. 90</td>
<td>Multimedia Production</td>
<td>4</td>
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<tr>
<td><strong>TOTAL UNITS REQUIRED:</strong></td>
<td><strong>13</strong></td>
<td></td>
</tr>
</tbody>
</table>

COMPUTER INFORMATION SYSTEMS COURSES

C.I.S. 1 COMPUTER BASICS

Units: 1.5
Hours: As scheduled for a total of 32 hours (27 lecture, 5 laboratory)
Basic hands-on introduction for new computer users: turning on the computer, operating a mouse, using a floppy disk. Includes basic terminology; simple word processing, email and web browsing. May be taken four times for credit.

C.I.S. 5 COMPUTER KEYBOARDING AND WORD PROCESSING BASICS

Units: 3
Advisory: Eligibility for E.S.L. 20L and 20R
Hours: 4 (3 lecture, 1 laboratory)
Introduction to touch-typing techniques. Development of accuracy and speed. Basic computer concepts and production of standard business documents using word processing software. Prepares students for C.I.S. 20 or any course requiring typed documents. Not recommended for students with one year of high school keyboarding or word processing.

C.I.S. 15 KEYBOARDING FOR COMPUTER USERS

Units: 1
Advisory: Completion of C.I.S. 50, C.I.S. 60, C.S. 10 or equivalent recommended
Hours: As scheduled for a total of 24 hours (18 lecture, 6 laboratory)
Intensive self-paced keyboarding course for students with previous computer experience, but no formal typing skills. Emphasizes alphanumeric data entry by touch. Develops speed and accuracy using a computer keyboard. May be taken two times for credit.

C.I.S. 20 KEYBOARD REVIEW AND SKILL BUILDING

Units: 3
Transfer: CSU
Advisory: Completion of C.I.S. 5, or one year high school computer keyboarding or equivalent recommended
Hours: 4 (3 lecture, 1 laboratory)
Computer keyboarding review using proper techniques. Setting performance goals with emphasis on accuracy and speed. Developing enhanced proofreading skills. Utilizing word processing software to create and format more complex business documents.

C.I.S. 28 INDEPENDENT STUDY

Units: 1-3
Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

C.I.S. 30 FUNDAMENTAL COMPUTER CONCEPTS AND APPLICATIONS

Units: 3
Transfer: CSU
Hours: 4 (3 lecture, 1 laboratory)
Hands-on introduction to personal computer applications for students with little prior computer experience. Includes basics of file management, word processing, spreadsheets and data entry. Introduces students to Windows operating system, Internet and web-based email. May be taken two times for credit.

C.I.S. 37 FUNDAMENTAL INTERNET TECHNIQUES AND STRATEGIES FOR COLLEGE

Units: 3
Transfer: CSU
Hours: 4 (3 lecture, 1 laboratory)
Hands-on introduction to the Internet and computer skills for practical application in online courses or college courses with a computer component. Locating educational websites, evaluating and citing web resources, saving and organizing research results. Strategies for online learning: online discussions download and upload course materials, attachments. Basic Internet security precautions. Along with C.I.S. 50, prepares for C.I.S. 67.
C.I.S. 40 INTRODUCTION TO COMPUTER OPERATING SYSTEMS  
(Inactive 3-11-2003)

C.I.S. 45 HELP DESK CONCEPTS  
Units: 3  
Transfer: CSU  
Hours: 4 (3 lecture, 1 laboratory)  
In-depth look at critical customer service skills. Listening and communicating, interacting by telephone, technical writing, handling difficult customer situations and common support problems. Focus on the technical support professionals. Includes job shadowing, help desk technology.

C.I.S. 50 APPLYING COMPUTER SOFTWARE  
Units: 3  
Transfer: CSU  
Hours: 4 (3 lecture, 1 laboratory)  
An introduction to the use of microcomputer applications. Hands-on experience with computers, emphasizing the use and relevancy of common software packages for word processing, spreadsheets with graphics, databases, and data communications.

C.I.S. 60 WINDOWS OPERATING SYSTEM  
Units: 3  
Transfer: CSU  
Advisory: Completion of C.I.S. 50 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Windows operating system, including managing files and folders, system back-up, working with applications and accessories, Windows maintenance and troubleshooting, Windows registry, establishing an Internet connection, networking.

C.I.S. 67 FOUNDATIONS FOR CREATING WEB PAGES  
Units: 3  
Transfer: CSU  
Advisory: Completion of C.I.S. 37 and 50 or equivalent  
Hours: 4 (3 lecture, 1 laboratory)  
Introduction to building Web pages using HTML and basic Web-authoring software; technical concepts behind Web pages: how the Internet works, connection technologies, Web search techniques, evaluating Web pages, file transfer, file compression, browser tips and tricks, mailing lists, Internet security. Prepares for C.I.S. 127 and 137.

C.I.S. 70 WORD PROCESSING—BEYOND THE BASICS  
Units: 3  
Transfer: CSU  
Advisory: Keyboarding skill of 25 w.p.m. and completion of C.I.S. 50 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Includes styles and outlines, generating form letters, mailing labels and envelopes, working with master documents, mapping features, indexes and tables of content, creating a report using wizards and templates, applying macros, integrating software, creating web pages and online forms.

C.I.S. 80 SPREADSHEETS IN A BUSINESS ENVIRONMENT  
Units: 3  
Transfer: CSU  
Advisory: Completion of C.I.S. 50 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Design and use of “what-if” analysis, static and dynamic web pages, financial functions, data and lookup tables, amortization schedules and templates. Includes working with multiple worksheets and workbooks, analyzing worksheet results, sorting and querying a worksheet database, using macros, and integrating software.

C.I.S. 87 INTRODUCTION TO ARC GIS (ALSO GEOG. 91A, GEOLOGY 91A, ART/DES. 67)  
Units: 1  
Transfer: CSU  
Advisory: Completion of Geog. 90 or equivalent recommended  
Hours: As scheduled for a total of 18 lecture hours  
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases, and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields.

C.I.S. 90 DATABASE MANAGEMENT  
Units: 3  
Transfer: CSU  
Advisory: Completion of C.I.S. 50 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Introduction to the use of database management programs on a computer. Includes creating database structure, accessing, editing, and searching files; and designing and producing reports and labels. Not a course in database programming.

C.I.S. 95 INTERNSHIP IN COMPUTER INFORMATION SYSTEMS  
Units: .5-4  
Transfer: CSU*  
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.
**C.I.S. 100 SOFTWARE FOR DYNAMIC PRESENTATIONS**  
Units: 3  Transfer: CSU  
Advisory: Completion of C.I.S. 50 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Integration of text, graphics, animation, music, movies and other software applications within a realistic business context. Customizing and executing quality presentations using basic through advanced design styles and techniques.

**C.I.S. 105 MICROSOFT OUTLOOK-MANAGING INFORMATION**  
Units: 3  Transfer: CSU  
Advisory: Completion of C.I.S. 50 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Includes managing email folders; sending, receiving, forwarding email messages; using “netiquette” and distribution lists; scheduling appointments, meeting, events; creating contacts, address books and calendars; tracking tasks; setting reminders; sharing information and publishing schedules via the web.

**C.I.S. 115 SOFTWARE CONFIGURATION AND TROUBLESHOOTING**  
Units: 3  Transfer: CSU  
Advisory: Completion of C.I.S. 50 and C.I.S. 60 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Basic skills in software troubleshooting and configuration, including configuring the operating system, setting a computer for different printers, diagnosing hardware and software problems, and providing interactive instructions for the solution.

**C.I.S. 120 DESKTOP PUBLISHING—WINDOWS ENVIRONMENT**  
Units: 3  Transfer: CSU  
Advisory: Completion of C.I.S. 50 or C.I.S. 70 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Desktop publishing in the Windows environment. Focus on conventional publishing concepts through the use of recreating published materials, page makeovers, templates and original work. Learning activities will include the preparation of flyers, newsletters, and reports.

**C.I.S. 127 CREATING WEB PAGES**  
Units: 3  Transfer: CSU  
Advisory: Completion of or concurrent enrollment in C.I.S. 67 or equivalent recommended  
Hours: 4 (3 lecture, 1 laboratory)  

**C.I.S. 137 MANAGING A SUCCESSFUL WEB PROJECT**  
Units: 3  Transfer: CSU  
Advisory: Completion of or concurrent enrollment in C.I.S. 67 recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Introduction to the process of managing a successful web project; integrating technology, creativity, business and end-user information. Key issues and techniques, from original idea through implementation of a new or redesigned site including: purpose, usability, user-focus, conceptual design, hosting, domain names, promotion, maintenance. Emphasis on planning for the site’s success in anticipation of investing in building it.

**C.I.S. 140 ADVANCED COMPUTER SOFTWARE APPLICATIONS**  
(Inactive 3-11-2003)

**C.I.S. 150 CAREERS IN THE COMPUTER INDUSTRY (ALSO CIE/CS/CST 150, PD 150C)**  
Units: .5  Transfer: CSU  
Hours: As scheduled for a total of 9 lecture hours  
Career exploration in the computer industry. Includes orientation to the academic program at Sierra College, employment opportunities, career pathways, educational planning of the Associates degree, certificate, transfer, research of labor market and occupational information. (Credit/No Credit Grading)

**C.I.S. 285 DIAGRAMMING AND DOCUMENTING A BUSINESS ENTERPRISE**  
Units: 1  
Prerequisite: Completion of C.I.S. 60 or equivalent  
Hours: As scheduled for a total of 24 hours (18 lecture, 6 laboratory)  
Introduction to the use of Microsoft Visio as a documentation and design tool for networks, databases, information flow charting and organizational charts. Includes the use of basic draw tools and stencils, as well as creating specialized views with layers and custom stencils.
C.I.S. 300 SELECTED TOPICS IN COMPUTER INFORMATION SYSTEMS

Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

C.I.S. 400 SELECTED TOPICS IN COMPUTER INFORMATION SYSTEMS

Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Computer Integrated Electronics
(Also see Computer Science, Computer Information Systems and Computer Service Technology)

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara
DIVISION OFFICE: B 3
FACULTY: M. Halbern, L. Mather
LIAISON COUNSELORS: D. Quadros, B. Ruud, C. West

The Computer Integrated Electronics curriculum was revised and updated to meet employment demands. There are two Associate Degree concentrations and four certificate options. The Computer Technology Concentration for the Associate Degree provides the practical knowledge and experience to install, program, and maintain business computing equipment, or the computer controlled electro-mechanical equipment used for measurement and control during product manufacturing. The Electronics Technology Concentration provides the practical knowledge and experience to troubleshoot and repair electronic analog and digital electronic equipment at the component level.

In the certificate patterns a student may choose the option that will meet a particular vocational skill requirement. Patterns are available that provide knowledge and experience in Optical Communications Technology, Linear Electronics Technology, and two levels of Computer Technology.

COMPUTER INTEGRATED ELECTRONICS—A.A. OR A.S. DEGREE
COMPUTER TECHNOLOGY CONCENTRATION
Successful completion of the curriculum in the concentration of Computer Technology prepares students for positions in firms which configure, program, install, and maintain business and industrial computing equipment. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>C.I.E. 10 Fundamentals of Computer Integrated Electronics</td>
<td>4</td>
</tr>
<tr>
<td>C.I.E. 14 Fabrication Techniques I</td>
<td>2</td>
</tr>
<tr>
<td>C.I.E. 25 Personal Computer Configuration &amp; Repair (also C.S.T. 25)</td>
<td>4</td>
</tr>
<tr>
<td>C.I.E. 26 Advanced Personal Computer Configuration &amp; Repair</td>
<td>4</td>
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<tr>
<td>PLUS 10 ADDITIONAL UNITS MINIMUM FROM:</td>
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<tr>
<td>C.I.E. 27 Desktop Digital Video Technology</td>
<td>4</td>
</tr>
<tr>
<td>C.I.E. 30 Microprocessor-Based Systems</td>
<td>4</td>
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<tr>
<td>C.I.E. 40 Microcomputers for Measurement and Control</td>
<td>4</td>
</tr>
<tr>
<td>C.I.E. 90 Microcontroller Embedded Systems</td>
<td>4</td>
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<tr>
<td>C.S. 12 Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 65 Local Area Networks (also C.S.T. 40)</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 70 Microcontroller Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24

Recommended Electives: C.I.E. 1, 24, Math D, 8, Physics 2A, 2B, 10
COMPUTER INTEGRATED ELECTRONICS—A.A. OR A.S. DEGREE
ELECTRONICS TECHNOLOGY CONCENTRATION
Successful completion of the curriculum in the concentration of Electronics Technology prepares students for positions in industries which manufacture and service electronic equipment. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES  UNITS
C.I.E. 10 Fundamentals of Computer Integrated Electronics  4
C.I.E. 14 Fabrication Techniques I  2
C.I.E. 20 Circuits for Computer Integrated Electronics  4
C.I.E. 24 Fabrication Techniques II  1
C.I.E. 25 Personal Computer Configuration and Repair (also C.S.T. 25)  4
C.I.E. 30 Microprocessor Based Systems  4
C.I.E. 44 Mechatronic Processes and Materials  2
C.I.E. 54 Mechatronics System  4
C.I.E. 90 Microcontroller Embedded Systems  4
TOTAL UNITS REQUIRED: 27

PLUS 8 ADDITIONAL UNITS FROM:
C.I.E. 40 Microcomputers for Measurement and Control  4
C.I.E. 60 Advanced Linear Circuits  4
C.I.E. 70 Opto Electronics  4
C.I.E. 80 Computer-Aided Simulation of Circuits  4
C.I.E. 90 Microcontroller Embedded Systems  4
TOTAL UNITS REQUIRED: 29

COMPUTER INTEGRATED ELECTRONICS—A.A. OR A.S. DEGREE OR CERTIFICATE
MECHATRONICS TECHNOLOGY CONCENTRATION
Successful completion of the curriculum in the concentration of Mechatronics Technology prepares students for positions in businesses and industries that manufacture, utilize or repair equipment incorporating electronics, mechanics, pneumatics, hydraulics and programming. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree, see pages 42-43.

REQUIRED COURSES  UNITS
C.I.E. 4 Fundamentals of Mechatronics  4
C.I.E. 10 Fundamentals of Computer Integrated Electronics  4
C.I.E. 14 Fabrication Techniques I  2
C.I.E. 25 Personal Computer Configuration and Repair (Also C.S.T. 25)  4
C.I.E. 44 Mechatronic Processes and Materials  2
C.I.E. 54 Mechatronics System  4
C.I.E. 90 Microcontroller Embedded Systems  4
TOTAL UNITS REQUIRED: 24

COMPUTER TECHNOLOGY CERTIFICATE
The Computer Technology certificate qualifies students for positions in firms which configure, program, install, and maintain automated production and test equipment used in manufacturing. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES  UNITS
C.I.E. 10 Fundamentals of Computer Integrated Electronics  4
C.I.E. 14 Fabrication Techniques I  2
C.I.E. 20 Circuits for Computer Integrated Electronics  4
C.I.E. 25 Personal Computer Configuration & Repair (also C.S.T. 25)  4
C.I.E. 26 Advanced Personal Computer Configuration & Repair  4
C.I.E. 30 Microprocessor Based Systems  4
C.I.E. 40 Microcomputers for Measurement and Control  4
C.S. 65 Local Area Networks (also C.S.T. 40)  3
TOTAL UNITS REQUIRED: 27

OPTO ELECTRONIC TECHNICIAN CERTIFICATE
The Opto Electronic Technician certificate qualifies students for entry-level positions in the opto electronic and fiber optic communication fields. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES  UNITS
C.I.E. 10 Fundamentals of Computer Integrated Electronics  4
C.I.E. 14 Fabrication Techniques I  2
C.I.E. 20 Circuits for Computer Integrated Electronics  4
C.I.E. 24 Fabrication Techniques II  1
C.I.E. 30 Microprocessor Based Systems  4
C.I.E. 60 Advanced Linear Circuits  4
C.I.E. 70 Opto Electronics  4
TOTAL UNITS REQUIRED: 23

LINEAR ELECTRONICS SKILLS CERTIFICATE
The Linear Electronics skills certificate qualifies students for entry-level technical positions in industries which manufacture and service analog equipment.

REQUIRED COURSES  UNITS
C.I.E. 10 Fundamentals of Computer Integrated Electronics  4
C.I.E. 14 Fabrication Techniques I  2
C.I.E. 20 Circuits for Computer Integrated Electronics  4
C.I.E. 24 Fabrication Techniques II  1
C.I.E. 60 Advanced Linear Circuits  4
TOTAL UNITS REQUIRED: 15
PERSONAL COMPUTER TECHNICIAN SKILLS CERTIFICATE
The Personal Computer Technician skills certificate qualifies students for entry-level positions in firms which configure, install, and maintain personal computing equipment.

REQUIRED COURSES

<table>
<thead>
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</tr>
<tr>
<td>C.I.E. 26 Advanced Personal Computer Configuration &amp; Repair</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 14

Recommended Sequence of Courses:

COMPUTER INTEGRATED ELECTRONICS COURSES

C.I.E. 1 THE SCIENCE OF ELECTRONICS
Units: 3
Transfer: CSU
Hours: 3 lecture
Survey of electronics technology presented in the context of the principles of science. Application of the scientific method to topics ranging from basic circuits to microprocessors, including electronic music, robotics, electric vehicles, fiber optics, semiconductors, and medical imaging. Scientific, historical, political, and economic connections to electronics technology.

C.I.E. 4 FUNDAMENTALS OF MECHATRONICS
Units: 4
Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Introduction to mechatronics, combining electronics, mechanics, pneumatics, and hydraulics, under computer control as applied to robotics and automation. Presented through hands-on, project-based experiments that demonstrate industrial applications.

C.I.E. 8 INTRODUCTION TO ELECTRONICS
Units: 3
Transfer: CSU
Hours: 3 lecture
General principles, concepts, and terminology of computer integrated electronics. Course material is at an elementary technical and mathematical level.

C.I.E. 10 FUNDAMENTALS OF COMPUTER INTEGRATED ELECTRONICS
Units: 4
Transfer: CSU
Hours: 7 (3 lecture, 4 laboratory)
A fundamental study of electronic devices, circuits, and systems as applied to audio, video, robotics, and computers. Presented through hands-on, project-based experiments.

C.I.E. 14 FABRICATION TECHNIQUES I
Units: 2
Transfer: CSU
Hours: 4 (1 lecture, 3 laboratory)
Introductory course covering the function and construction of electronic projects and equipment. Includes the design and fabrication of enclosures, single and double-sided printed circuit boards, safe use of power and hand tools, through hole and surface mount soldering, rework techniques and wiring.

C.I.E. 20 CIRCUITS FOR COMPUTER INTEGRATED ELECTRONICS
Units: 4
Transfer: CSU
Advisory: Completion of C.I.E. 10 or equivalent recommended
Hours: 6 (3 lecture, 3 laboratory)
Digital and linear integrated circuits and circuit configurations with applications to computer operation, measurement, and control. Topics include power supply regulation, sequential and arithmetic digital logic, and advanced operational amplifier configurations. Circuit design and evaluation on standard personal computers.

C.I.E. 24 FABRICATION TECHNIQUES II
Units: 1
Transfer: CSU
Advisory: Completion of C.I.E. 14 or equivalent recommended
Hours: 3 laboratory
A fabrication-oriented course with emphasis on computer-aided design, construction, finishing, and troubleshooting of an electronic project.

C.I.E. 25 PERSONAL COMPUTER CONFIGURATION AND REPAIR (ALSO C.S.T. 25)
Units: 4
Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Concentrated study of personal computer hardware and operating system software installation, configuration, upgrading, troubleshooting, and repair. Hardware topics will include motherboards, peripheral cards, communication protocols and cabling. Software topics will include basic input output systems (BIOS) and power on system test (POST) procedures, disk operating system (DOS) and Windows operation essentials, local area network (LAN) fundamentals, and troubleshooting programs.
C.I.E. 26 ADVANCED PERSONAL COMPUTER CONFIGURATION AND REPAIR
Units: 4 Transfer: CSU
Advisory: Completion of C.I.E. 25 or a basic knowledge of personal computer hardware and operating system software recommended
Hours: 6 (3 lecture, 3 laboratory)
Advanced study of personal computer hardware, networking and operating system software installation, configuration, upgrading, troubleshooting, and repair. Topics include motherboard and peripheral cards, small computer systems interface (SCSI), firewire and universal serial bus (USB) interfaces, CD and DVD disc rewritable drives, modems, wired and wireless networks, printers, scanners, video and audio capture cards, cabling, and all support software.

C.I.E. 27 DESKTOP DIGITAL VIDEO TECHNOLOGY
Units: 4
Advisory: Completion of C.I.E. 25 or equivalent recommended
Hours: 6 (3 lecture, 3 laboratory)
Study of the hardware, software, and underlying technology for digital video. Hardware includes analog and digital cameras, non-linear editing workstations, CD and DVD burners, and audio recording tools. Software includes video capture, editing, compression, and output. Covers building and upgrading of practical configurations. Provides core technical knowledge for students learning and using modern video techniques.

C.I.E. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

C.I.E. 30 MICROPROCESSOR-BASED SYSTEMS
Units: 4 Transfer: CSU
Advisory: Completion of C.I.E. 20 or equivalent recommended
Hours: 6 (3 lecture, 3 laboratory)
Advanced study in microprocessor and microcomputer design and operation. Topics include system internal and external architecture, microprogramming, peripheral interface devices, analog to digital and digital to analog conversion, parallel and serial interface considerations. Programs will be assembled on a personal computer and downloaded to microprocessor-based control systems.

C.I.E. 40 MICROCOMPUTERS FOR MEASUREMENT AND CONTROL
Units: 4 Transfer: CSU
Advisory: Completion of C.I.E. 30 or equivalent knowledge recommended
Hours: 6 (3 lecture, 3 laboratory)
Specialized study in the interface hardware and software required to convert a microcomputer into a measurement and/or control station. Topics include general interface adaptor requirements, digital test station, analog test station, and robotic control station design. Students will build and interface measurement and control systems to typical microcomputers.

C.I.E. 44 MECHATRONIC PROCESSES AND MATERIALS
Units: 2 Transfer: CSU
Hours: 4 (1 lecture, 3 laboratory)
Application of tools and materials required for the design, installation and repair of mechatronic systems. Each student will fabricate a final project applying system-based mechatronic principles and skills.

C.I.E. 54 MECHATRONICS SYSTEM
Units: 4 Transfer: CSU
Prerequisite: Completion of C.I.E. 4 and 10, or equivalent experience
Advisory: Completion of C.I.E. 25 or equivalent experience
Hours: 6 (3 lecture, 3 laboratory)
Full integration of mechatronic principles into complete systems such as automated production equipment, business machines, and industrial robots. Topics include sensors, actuators, AC and DC motors, power distribution, and networked programmable logic control.

C.I.E. 60 ADVANCED LINEAR CIRCUITS
Units: 4 Transfer: CSU
Prerequisite: Completion of C.I.E. 20 or equivalent
Hours: 6 (3 lecture, 3 laboratory)
Advanced course in the linear integrated circuit theory and application. Includes power amplifier circuit design and characteristics, digital filters, oscillators, switching voltage regulators, thyristors, radio communication techniques and special purpose linear integrated circuits.

C.I.E. 70 OPTO ELECTRONICS
Units: 4 Transfer: CSU
Prerequisite: Completion of C.I.E. 20 or basic understanding of electronic circuits
Hours: 6 (3 lecture, 3 laboratory)
Advanced study in the integrated fields of electronics and optics, including theory of emitters, detectors, fiber optic wave guides, support circuits, and opto electronic communication systems.
C.I.E. 80 COMPUTER-AIDED SIMULATION OF CIRCUITS
Units: 4  Transfer: CSU
Advisory: C.I.E. 20 or basic understanding of analog and digital circuits is recommended
Hours: 6 (3 lecture, 3 laboratory)
An advanced course in the principles of computer-aided circuit design and analysis. Computer based analog and digital simulators will be used extensively to evaluate and optimize prototype designs.

C.I.E. 90 MICROCONTROLLER EMBEDDED SYSTEMS
Units: 4  Transfer: CSU
Advisory: Completion of C.I.E. 30 or understanding of microprocessors recommended
Hours: 6 (3 lecture, 3 laboratory)
Study of microcontroller based embedded systems using industry standard hardware and development software. Topics and laboratory exercises covering system internal and external architecture, applications of embedded systems, real world interfacing, software development, test and troubleshooting techniques.

C.I.E. 95 INTERNSHIP IN COMPUTER INTEGRATED ELECTRONICS
Units: .5-4  Transfer: CSU*
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

C.I.E. 150 CAREERS IN THE COMPUTER INDUSTRY (ALSO CIS/CS/CST 150, PD 150C)
Units: .5  Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Career exploration in the computer industry. Includes orientation to the academic program at Sierra College, employment opportunities, career pathways, educational planning of the Associates degree, certificate, transfer, research of labor market and occupational information. (Credit/No Credit Grading)

C.I.E. 300 SELECTED TOPICS IN COMPUTER INTEGRATED ELECTRONICS
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
CoMPuTEr sCiENCe

CoMPuTEr sCiENCe —A.A. OR A.S. DEGREE
MANAGEMENT INFORMATION SYSTEMS CONCENTRATION

The curriculum in Management Information Systems has special emphasis on development, installation, and maintenance of business software applications. Students must fulfill major requirements and all associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQuIREd COURSES

C.S. 10 Introduction to Computing ........................................ 3
C.S. 27 Visual Basic .NET Programming I .................................. 3
C.S. 50 Introduction to UNIX ................................................... 3
C.S. 52 Introduction to SQL .................................................... 3
C.S. 54 Visual Basic .NET Programming II ................................ 3
C.S. 62 Web Programming I .................................................... 3
C.S. 65 Local Area Networks (Also C.S.T. 40) ........................... 3
C.S. 12 Introduction to Object-Oriented Programming ............... 3
C.S. 13 Intermediate Object-Oriented Programming .................. 3
C.S. 57 UNIX System Administration ....................................... 3
C.S. 59 Introduction to PERL Programming ................................ 3
C.S. 63 Web Programming II .................................................... 3
C.S. 64 Web Server Technology .................................................. 3
C.S. 68 XML Programming ........................................................ 3
C.S. 70 Microcontroller Programming ...................................... 4

TOTAL UNITS REQUIRED: 27

PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING:

C.S. 10 Introduction to Computing ........................................ 3
C.S. 12 Introduction to Object-Oriented Programming ............... 3
C.S. 57 UNIX System Administration ....................................... 3
C.S. 59 Introduction to PERL Programming ................................ 3
C.S. 63 Web Programming II .................................................... 3
C.S. 64 Web Server Technology .................................................. 3
C.S. 68 XML Programming ........................................................ 3
C.S. 70 Microcontroller Programming ...................................... 4

TOTAL UNITS REQUIRED: 27

CoMPuTEr sCiENCe —A.A. OR A.S. DEGREE OR CERTIFICATE
NETWoRKiNG CONCENTRATION

SEE: COMPUTER SERVICE TECHNOLOGY

CoMPuTEr sCiENCe —A.A. OR A.S. DEGREE OR CERTIFICATE
WEB PROGRAMMING CONCENTRATION

Successful completion of the curriculum in Web Programming Concentration prepares students for careers in Web design, access, and implementation, and for writing programs that can be run from the Internet. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQuIREd COURSES

C.S. 10 Introduction to Computing ........................................ 3
C.S. 12 Introduction to Object-Oriented Programming OR
C.S. 50 Introduction to UNIX .................................................... 3
C.S. 54 Visual Basic .NET Programming II ................................ 3
C.S. 59 Introduction to PERL Programming ................................ 3
C.S. 64 Web Server Technology .................................................. 3
C.S. 68 XML Programming ........................................................ 3

PLUS 6 ADDITIONAL UNITS FROM THE FOLLOWING:

C.S. 13 Intermediate Object-Oriented Programming ............... 3
C.S. 50 Introduction to UNIX .................................................... 3
C.S. 54 Visual Basic .NET Programming II ................................ 3
C.S. 59 Introduction to PERL Programming ................................ 3
C.S. 64 Web Server Technology .................................................. 3

TOTAL UNITS REQUIRED: 27

CoMPuTEr sCiENCe —A.A. OR A.S. DEGREE
CoMPuTEr tECHniCAl CONCENTRATION

SEE: COMPUTER INTEGRATED ELECTRONICS

CoMPuTEr sCiENCe —A.A. OR A.S. DEGREE OR CERTIFICATE
EMBEDDED SYSTEMS CONCENTRATION

Successful completion of the curriculum in Embedded Systems concentration prepares students for entry-level programming positions in companies which manufacture products that have embedded microprocessors. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S.

REQuIREd COURSES

C.S. 52 Introduction to SQL .................................................... 3
C.S. 54 Visual Basic .NET Programming II ................................ 3
C.S. 59 Introduction to PERL Programming ................................ 3
C.S. 63 Web Programming II .................................................... 3
C.S. 66 Object-Oriented Programming Using C++ ..................... 3
C.S. 67 Object-Oriented Programming Using JAVA .................... 3
C.S. 70 Microcontroller Programming ...................................... 4

TOTAL UNITS REQUIRED: 27

CoMPuTEr sCiENCe —A.A. OR A.S. DEGREE OR CERTIFICATE
WEB SERVER ADMINISTRATION CONCENTRATION

Successful completion of the Web Server Administration con-
centrations prepare students for careers in development, technical support, maintenance, and administration of web servers. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

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<tr>
<td>C.S. 65</td>
<td>Local Area Networks (Also C.S.T. 40)</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 24

**COMPUTER SCIENCE PROGRAMMING CERTIFICATE OBJECT-ORIENTED CONCENTRATION**

The programming certificate with an object-oriented concentration provides students with education in Computer Science programming, including object-oriented program analysis, design, and code experience for writing programs and reading/writing to databases. This certificate prepares students for entry-level employment and provides skills upgrade training for persons currently employed in the field or those who are changing careers.

**REQUIRED COURSES**

<table>
<thead>
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</tr>
<tr>
<td>C.S. 52</td>
<td>Introduction to SQL</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 66</td>
<td>Object-Oriented Programming Using C++</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 67</td>
<td>Object-Oriented Programming Using Java</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 18

**COMPUTER SCIENCE COURSES**

**C.S. 10 INTRODUCTION TO COMPUTING**

**Units:** 3  
**Transfer:** CS/UC  
**Advisory:** Completion of Math. A or equivalent  
**Hours:** 4 (3 lecture, 1 laboratory)

Survey of computer science technologies and methods. Introduction to computer hardware and software, structured programming, operating system concepts, communications and social impacts of computer technology. Explore current and emerging topics such as the Internet, robotics, computer security and artificial intelligence.

**C.S. 12 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING**

**Units:** 3  
**Transfer:** CS/UC  
**Prerequisite:** Completion of C.S. 10 or equivalent  
**Hours:** 4 (3 lecture, 1 laboratory)

Introductory programming course emphasizing simple algorithms, sequence, selection, repetition, modularity, arrays, abstract data types, object-oriented design, classes, member functions, encapsulation, and basic file input/output.

**C.S. 13 INTERMEDIATE OBJECT-ORIENTED PROGRAMMING**

**Units:** 3  
**Transfer:** CS/UC  
**Prerequisite:** Completion of C.S. 12 or equivalent  
**Hours:** 4 (3 lecture, 1 laboratory)

Intermediate programming course emphasizing object-oriented program design. Applying techniques for systematic problem analysis, program specification, design, coding testing, debugging and documentation of large programs. Advanced language features: strings, sets, text and non-text files, references and pointers. Abstract data types: simple lists, stacks and queues. Recursive algorithms, selected sorting and search algorithms and their analysis.

**C.S. 26 DISCRETE STRUCTURES FOR COMPUTER SCIENCE**

**Units:** 3  
**Transfer:** CS/UC  
**Prerequisite:** Completion of C.S. 10 or equivalent  
**Hours:** 4 (3 lecture, 1 laboratory)

Introduction to the essential discrete structures used in Computer Science, with emphasis on their applications. Includes elementary formal logic and set theory, elementary combinatorics, recursive programming and algorithm analysis, Boolean Algebra, digital logic, combinatorial circuits, circuit design and minimization, and computer arithmetic.
C.S. 27 VISUAL BASIC .NET PROGRAMMING I
Units: 3 Transfer: CSU
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Introduction to methods and techniques of Visual Basic .NET programming. Includes coverage of user interface design, variables, decisions, menus, functions, object-oriented programming, looping, arrays, files, and graphics. Designed to bring students up to the necessary skill and knowledge level for an intermediate-level programming course.

C.S. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

C.S. 39 ASSEMBLY LANGUAGE PROGRAMMING
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Assembly language programming techniques. Topics include addressing modes; pseudo operations; stack processing; subroutine linkage; arithmetic and logical operations; input and output. Programs are designed, coded, tested, and debugged. (CAN CSCI 10)

C.S. 46 C LANGUAGE PROGRAMMING
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Extensive programming practice using the C language. Concentration on mastering C programming skills for programming effectively in industry, government, and engineering. (CAN CSCI 16)

C.S. 50 INTRODUCTION TO UNIX
Units: 3 Transfer: CSU
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
An introduction to the UNIX operating system. A comprehensive study, with laboratory assignments, of UNIX commands, file manipulation, shell programming, administration, and security.

C.S. 52 INTRODUCTION TO SQL
Units: 3 Transfer: CSU
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Survey of SQL (Structured Query Language). Includes database models, database design, table and view definition, transaction and data manipulation, queries and reports, data integrity, stored procedures, triggers, recovery and security. Hands-on experience using a popular SQL database.

C.S. 54 VISUAL BASIC .NET PROGRAMMING II
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of C.S. 27 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Intermediate Visual Basic .NET programming. Includes coverage of multitier applications, database applications, databases using related tables, database updates, using Web forms, Web forms database & updates, XML Web services, and writing database reports using Crystal Reports.

C.S. 55 ASP.NET PROGRAMMING
Units: 3 Transfer: CSU
Prerequisite: Completion of C.S. 27 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Intermediate Web programming course. Combines ASP (Active Server Pages) and Visual Basic .NET programming to create dynamic data-driven Web applications. Covers Web programming concepts including advanced topics of ADO and implementing security in ASP.

C.S. 57 UNIX SYSTEM ADMINISTRATION
Units: 3 Transfer: CSU
Prerequisite: Completion of C.S. 50 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Survey of system administration functions and duties with the UNIX operating system. Topics include setting up file systems, adding and removing users, file maintenance, security, networking, configuring, and backing up.

C.S. 59 INTRODUCTION TO PERL PROGRAMMING
Units: 3 Transfer: CSU
Prerequisite: Completion of C.S. 50 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Survey of the PERL (Practical Extraction and Reporting Language) programming environment. Introduction to PERL programming in a UNIX environment emphasizing lists, files, regular expressions, subroutines, and standard libraries. Writing PERL programs for a wide variety of business and Web-based applications.
C.S. 62 WEB PROGRAMMING I
Units: 3  Transfer: CSU
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Introduction to methods and techniques of Web programming. Includes coverage of HyperText Markup Language (HTML), Cascading Style Sheets (CSS), Extensible HyperText Markup Language (XHTML), and JavaScript. Designed to bring students up to the necessary skill and knowledge level for an intermediate Web programming course.

C.S. 63 WEB PROGRAMMING II
Units: 3  Transfer: CSU
Prerequisite: Completion of C.S. 62 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Intermediate Web programming course. Emphasizes Extensible HyperText Markup Language (XHTML) and JavaScript. Includes: animated Web pages; rollovers, menus, filters, and transitions; interactive windows/frames; form validation using regular expressions; shopping carts; and creating a dynamic table of contents.

C.S. 64 WEB SERVER TECHNOLOGY
Units: 3  Transfer: CSU
Prerequisite: Completion of C.S. 50 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Survey of web server technologies including HTTP (HyperText Transfer Protocol), virtual servers, caching, proxies, secure HTTP, indexing, CGI (Common Gateway Interface), authentication, security and privacy. Install, configure and run a web server in a Unix environment.

C.S. 65 LOCAL AREA NETWORKS (ALSO C.S.T. 40)
Units: 3  Transfer: CSU
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Installation and administration of Local Area Networks (LANS). Topics include: terminology, cabling systems, architectures, topologies, protocols, network operating systems, sharing network devices and software, network backup/recovery, diagnostics, and an introduction to various Wide Area Network connections. Laboratory assignments focus on building and configuring LANs with Microsoft Network Operating Systems.

C.S. 66 OBJECT-ORIENTED PROGRAMMING USING C++
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of C.S. 12 or C.S. 46 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
An introduction to the concepts of object-oriented programming and the application of the C++ language. Extensive programming practice using C++ as the vehicle toward modular, reusable object-oriented code.

C.S. 67 OBJECT-ORIENTED PROGRAMMING USING JAVA
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of C.S. 12 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Intermediate object-oriented programming course using Java and emphasizing inheritance, graphics, graphical user interfaces, applets and Internet programming, built-in data structures, exception handling, input/output streaming, multi-threading and networking.

C.S. 68 XML PROGRAMMING
Units: 3  Transfer: CSU
Prerequisite: Completion of C.S. 62 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Intermediate Web course. Combines XML (Extensible Markup Language) and programming familiarity to create dynamic data-driven Web applications. Covers DTD (Document Type Definitions), CSS (Cascading Style Sheets), XSL (Extensible Style Sheets), and DOM (Document Object Model).

C.S. 70 MICROCONTROLLER PROGRAMMING
Units: 4
Prerequisite: Completion of C.S. 39
Hours: 6 (3 lecture, 3 laboratory)
Microcontroller programming techniques. Topics include microcontroller architecture, peripheral programming, high-level language interfacing and real-time control methodologies. Extensive practice writing microcontroller programs. Students are required to implement a substantial project.

C.S. 95 INTERNSHIP IN COMPUTER SCIENCE
Units: .5-4  Transfer: CSU*
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships.
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of software engineers, system analysts, system programmers, web programmers and web server administrators. Provides new on-the-job technical training under the direction of a worksite supervisor allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.
C.S. 150 CAREERS IN THE COMPUTER INDUSTRY (ALSO CIE/CIS/CST 150, PD 150C)
Units: .5  Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Career exploration in the computer industry. Includes orientation to the academic program at Sierra College, employment opportunities, career pathways, educational planning of the Associates degree, certificate, transfer, research of labor market and occupational information. (Credit/No Credit Grading)

C.S. 300 SELECTED TOPICS IN COMPUTER SCIENCE
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

C.S. 400 SELECTED TOPICS IN COMPUTER SCIENCE
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Computer Service Technology
(Also see Computer Information Systems, Computer Integrated Electronics and Computer Science)

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara
DIVISION OFFICE: B 3
FACULTY: S. Linthicum, A. Nylander
LIAISON COUNSELORS: B. Hawkes, K. Parker

The Computer Service Technology curriculum prepares students for entry into careers in information technology fields such as computer technician, network administration, and database administration. There are two associate degree or certificate concentrations and two certificate-only concentrations.

Many of the courses are transferable to the CSU system and students planning to transfer should work with a counselor to ensure all requirements are met. Students working toward an A.A. or A.S. degree must fulfill General Education Requirements and should consult with counselors and faculty to select courses that will best enhance their area of interests.

COMPUTER SERVICE TECHNOLOGY—A.A. OR A.S. DEGREE OR CERTIFICATE

Many of the courses are transferable to the CSU system and students planning to transfer should work with a counselor to ensure all requirements are met. Students working toward an A.A. or A.S. degree must fulfill General Education Requirements and should consult with counselors and faculty to select courses that will best enhance their area of interests.

COMPUTER SERVICE TECHNOLOGY—A.A. OR A.S. DEGREE OR CERTIFICATE

The Computer Service Technology curriculum prepares students for entry-level Information Technology support positions in a number of areas. This concentration also helps prepare students for a number of vendor neutral, industry certification exams, offered through the CompTIA organization. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUISITE COURSES

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>C.I.S. 50 Applying Computer Software</td>
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<tr>
<td>C.S. 10 Introduction to Computing</td>
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</tr>
<tr>
<td>C.S.T. 25 Personal Computer Configuration &amp; Repair (also C.I.E. 25)</td>
<td>4</td>
</tr>
<tr>
<td>C.S.T. 30 Preparation for A+ Certification</td>
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</table>

PLUS 7 ADDITIONAL UNITS FROM THE FOLLOWING:

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<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>C.I.E. 26 Advanced Personal Computer Configuration &amp; Repair</td>
<td>4</td>
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<tr>
<td>C.I.S. 45 Help Desk Concepts</td>
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</tr>
<tr>
<td>C.I.S. 115 Software Configuration &amp; Troubleshooting</td>
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</tr>
<tr>
<td>C.S.T. 35 Preparation for Network+ Certification</td>
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<tr>
<td>C.S.T. 71 Wireless Networking and Security</td>
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</tr>
<tr>
<td>C.S.T. 95 Internship in Computer Service Technology</td>
<td>.5-4</td>
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</tbody>
</table>

TOTAL UNITS REQUIRED: 19

COMPUTER SERVICE TECHNOLOGY—A.A. OR A.S. DEGREE OR CERTIFICATE

The Computer Service Technology curriculum prepares students for entry into careers in information technology fields such as computer technician, network administration, and database administration. There are two associate degree or certificate concentrations and two certificate-only concentrations.

Many of the courses are transferable to the CSU system and students planning to transfer should work with a counselor to ensure all requirements are met. Students working toward an A.A. or A.S. degree must fulfill General Education Requirements and should consult with counselors and faculty to select courses that will best enhance their area of interests.

REQUISITE COURSES

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<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>C.S. 10 Introduction to Computing</td>
<td>3</td>
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<tr>
<td>C.S. 50 Introduction to UNIX</td>
<td>3</td>
</tr>
<tr>
<td>C.S.T. 40 Local Area Networks (also C.S. 65)</td>
<td>3</td>
</tr>
<tr>
<td>C.S.T. 45 Installing, Configuring &amp; Administering a Secure Microsoft Client</td>
<td>3</td>
</tr>
</tbody>
</table>
C.S.T. 50 Installing, Configuring & Administering a Secure Windows Server .................................................. 3

PLUS 6-7 ADDITIONAL UNITS FROM THE FOLLOWING:
C.I.S. 285 Diagramming & Documenting a Business Enterprise . . 1
C.S. 57 UNIX System Administration .............................................. 3
C.S. 64 Web Server Technology .................................................. 3
C.S.T. 41 Home Technology Integration ...................................... 3
C.S.T. 55 Supporting a Network Infrastructure ............................. 3
C.S.T. 56 Managing a Windows Network Environment .................. 3
C.S.T. 60 Implementing & Administering Directory Services ......... 3
C.S.T. 65 Designing the Logical & Physical Aspects of an Enterprise Network .................................................. 3

C.T.O.TAL uniTS ReQuiReD: 21-22

COMPUTER SERVICE TECHNOLOGY—
CERTIFICATE
MICROSOFT SYSTEMS ADMINISTRATOR
CONCENTRATION
Successful completion of the Systems Administrator curriculum prepares students for positions as network administrators in existing networked environments and helps them prepare for the MCSE exams.

REQUIRED COURSES UNITS
C.S.T. 25 Personal Computer Configuration & Repair (also C.I.E. 25) 4
C.S.T. 30 Preparation for A+ Certification ................................... 2
C.S.T. 35 Preparation for Network+ Certification ......................... 4
C.S.T. 45 Installing, Configuring & Administering a Secure Microsoft Client .................................................. 3
C.S.T. 50 Installing, Configuring & Administering a Secure Windows Server .................................................. 3
C.S.T. 56 Managing a Windows Network Environment .................. 3
TOTAL UNITS REQUIRED: 19

COMPUTER SERVICE TECHNOLOGY—
CERTIFICATE
MICROSOFT SYSTEMS ENGINEER
CONCENTRATION
The Successful completion of the Systems Engineer curriculum prepares students for positions as higher-level network administrators responsible for design and restructuring of networks and helps them prepare for the MCSE exams.

REQUIRED COURSES UNITS
C.S.T. 45 Installing, Configuring & Administering a Secure Microsoft Client .................................................. 3
C.S.T. 50 Installing, Configuring & Administering a Secure Windows Server .................................................. 3
C.S.T. 55 Supporting a Network Infrastructure ............................. 3
C.S.T. 60 Implementing & Administering Directory Services ......... 3
C.S.T. 65 Designing the Logical & Physical Aspects of an Enterprise Network .................................................. 3

PLUS 3 ADDITIONAL UNITS FROM THE FOLLOWING:
C.S.T. 70 Internet & Intranet Security ......................................... 3
C.S.T. 71 Wireless Networking and Security ................................ 3
C.S.T. 75 Messaging Server Administration ................................ 3
C.S.T. 85 Database Administration in a Client/Server Environment 3
TOTAL UNITS REQUIRED: 18

COMPUTER SERVICE TECHNOLOGY COURSES
C.S.T. 25 PERSONAL COMPUTER CONFIGURATION
AND REPAIR (ALSO C.I.E. 25)
Units: 4 Transfer: CSU
Hours: 6(3 lecture, 3 laboratory)
Concentrated study of personal computer hardware and operating system software installation, configuration, upgrading, troubleshooting, and repair. Hardware topics will include motherboards, peripheral cards, communication protocols and cabling. Software topics will include basic input output systems (BIOS) and power on system test (POST) procedures, disk operating system (DOS) and Windows operation essentials, local area network (LAN) fundamentals, and troubleshooting programs.

C.S.T. 30 PREPARATION FOR A+ CERTIFICATION
Units: 2
Advisory: Completion of C.S.T. 25 or C.I.E. 25 or equivalent recommended
Hours: As scheduled for a total of 48 hours (36 lecture, 12 laboratory)
Advanced course focusing on the tools and techniques required to meet the objectives of CompTIA's A+ certification. Includes troubleshooting and repairing personal computers and associated peripheral devices, installation, configuration, upgrading, diagnosing, repair, safety, and preventive maintenance.
C.S.T. 35 PREPARATION FOR NETWORK+ CERTIFICATION
Units: 4
Advisory: Completion of C.S.T. 30 or equivalent recommended
Hours: As scheduled for a total of 108 hours (54 lecture, 54 laboratory)
Advanced course focusing on the tools and techniques required to meet the objectives of CompTIA's Network+ certification. Includes installations, configuration, upgrading, diagnosing, troubleshooting, repairing, security and fault tolerance of network hardware and software, insuring data integrity and redundancy, design and implementation of common transmission mediums, and termination of facilities. Covers the major concepts if internetworking with an emphasis on vendor neutrality.

C.S.T. 40 LOCAL AREA NETWORKS (ALSO C.S. 65)
Units: 3
Prerequisite: Completion of C.S. 10 or equivalent
Hours: 4(3 lecture, 1 laboratory)
Installation and administration of Local Area Networks (LANS). Topics include: terminology, cabling systems, architectures, topologies, protocols, network operating systems, sharing network devices and software, network backup/recovery, diagnostics, and an introduction to various Wide Area Network connections. Laboratory assignments focus on building and configuring LANs with Microsoft Network Operating Systems.

C.S.T. 41 HOME TECHNOLOGY INTEGRATION
Units: 3
Advisory: Completion of C.S.T. 40/C.S. 65, or C.S.T. 25/C.I.E. 25, or equivalent experience
Hours: 4 (3 lecture, 1 laboratory)
Introduction to home technology integration. Home networks and control of electrical sub-systems from the home computer or remotely through a web connection. Hands-on experience installing home technology equipment looking at issues, options and design considerations within the industry. Topics include tools and equipment needs, codes and standards, and installation options.

C.S.T. 45 INSTALLING, Configuring & Administering a Secure Microsoft Client (FORMERLY C.S. 81)
Units: 3
Prerequisite: Completion of C.S.T. 35 or C.S.T. 40 or C.S. 65 or equivalent
Hours: 4(3 lecture, 1 laboratory)
Setup and support for a desktop operating system in a networked environment, creation of local and domain-level accounts, use of network services, remote access, resource management and monitoring, and security considerations.

C.S.T. 50 INSTALLING, Configuring & Administering a Secure Windows Server (FORMERLY C.S. 82)
Units: 3
Transfer: CSU
Prerequisite: Completion of C.S.T. 45 or equivalent
Hours: 4(3 lecture, 1 laboratory)
Setup, configuration and support of a Server Operating System in a networked environment, creation of local and domain-level accounts, use of network services in a mixed and native mode environment, remote access, resource management, monitoring, and security considerations with a more in-depth look at directory services. Preparation for Microsoft certification examination.

C.S.T. 55 SUPPORTING A NETWORK INFRASTRUCTURE (FORMERLY C.S. 83)
Units: 3
Transfer: CSU
Prerequisite: Completion of C.S.T. 50 or equivalent
Hours: 4(3 lecture, 1 laboratory)
Support issues relating to installations, configuration and management of network infrastructures. Preparation for Microsoft certification examination.

C.S.T. 56 MANAGING A WINDOWS NETWORK ENVIRONMENT
Units: 3
Prerequisite: Completion of C.S.T. 50 or equivalent
Hours: 4 (3 lecture, 1 laboratory)
Skills needed to perform desktop and server installation and configuration tasks. Network and operating system management tasks in a Microsoft Windows environment including implementation, management, and troubleshooting. Preparation for MSCA certification examination.

C.S.T. 60 IMPLEMENTING AND ADMINISTERING DIRECTORY SERVICES (FORMERLY C.S. 84)
Units: 3
Transfer: CSU
Prerequisite: Completion of C.S.T. 55 or equivalent
Hours: 4(3 lecture, 1 laboratory)
Implementation and administration of network directory services, Group Policy, and tasks required to centrally manage users and computers. Preparation for Microsoft certification examination.

C.S.T. 65 DESIGNING THE LOGICAL & PHYSICAL ASPECTS OF AN ENTERPRISE NETWORK (FORMERLY C.S. 88)
Units: 3
Prerequisite: Completion of C.S.T. 60 or equivalent
Hours: 4(3 lecture, 1 laboratory)
Updating skills associated with the Migration from older Network Operating Systems to modern Network Operating Systems. Surveying advances and additions in features of improved network environments.
C.S.T. 70 INTERNET AND INTRANET SECURITY  
(FORMERLY C.S. 85)  
Units: 3  
Prerequisite: Completion of C.S.T. 50 or equivalent  
Hours: 4 (3 lecture, 1 laboratory)  
Installation and administration of software-based firewall solutions and web server installations. Includes security systems analysis that integrates firewall protection, encrypted e-mail and relational databases with Internet and Intranet web servers. Analysis of an organization’s exposure to security threats from internal and external sources and protection of network users from hostile applications and viruses.

C.S.T. 71 WIRELESS NETWORKING AND SECURITY  
Units: 3  
Advisory: C.S.T. 50 or equivalent experience recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Design, plan, implement, operate and troubleshoot wireless networks. Includes a comprehensive overview of technologies, security, and design best practices. Particular emphasis on hands-on skills in wireless LAN setup & troubleshooting, resilient WLAN design, installation and configuration, site surveys, and vendor interoperability strategies.

C.S.T. 75 MESSAGING SERVER ADMINISTRATION  
(FORMERLY C.S. 87)  
Units: 3  
Prerequisite: Completion of C.S.T. 50 or equivalent  
Hours: 4 (3 lecture, 1 laboratory)  
Installation and administration of messaging servers. Includes installation, configuration, management and tuning of mail and messaging servers on both servers and clients, mail access protocols; security issues and Internet connectivity.

C.S.T. 85 DATABASE ADMINISTRATION IN A CLIENT/SERVER ENVIRONMENT (FORMERLY C.S. 92)  
Units: 3  
Prerequisite: Completion of C.S. 52 or equivalent  
Hours: 4 (3 lecture, 1 laboratory)  
Installation, configuration, administration and troubleshooting a client-server database management system.

C.S.T. 95 INTERNSHIP IN COMPUTER SERVICE TECHNOLOGY  
Units: .5-4 Transfer: CSU*  
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

C.S.T. 100 THIN CLIENT-APPLICATIONS SERVER NETWORKING (FORMERLY C.S. 281)  
Units: 1  
Prerequisite: Completion of C.S.T. 45 and C.S.T. 50 or equivalent  
Hours: As scheduled for a total of 24 hours (18 lecture, 6 laboratory)  
Establishing an applications distribution environment to “thin” client computers. Introductory overview of networking concepts relating to the distribution by Applications Service Providers of standard and non-standard user applications to “thin” client platforms utilizing client and server software. May be taken three times for credit.

C.S.T. 150 CAREERS IN THE COMPUTER INDUSTRY (ALSO CIE/CIS/CS 150, PD 150C)  
Units: .5 Transfer: CSU  
Hours: As scheduled for a total of 9 lecture hours  
Career exploration in the computer industry. Includes orientation to the academic program at Sierra College, employment opportunities, career pathways, educational planning of the Associates degree, certificate, transfer, research of labor market and occupational information. (Credit/No Credit Grading)

C.S.T. 400 SELECTED TOPICS IN COMPUTER SERVICE TECHNOLOGY  
Units: .5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Construction Technology
(Cabinet—Residential)

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara
DIVISION OFFICE: B3
FACULTY: C. Chamberlain, E. Wicks
LIAISON COUNSELORS: E. Dickson, C. Epting-Davis, D. Quadros, B. Ruud

The Construction Technology curriculum is designed to give students broad training not only in a specific trade but in a variety of useful academic subjects as well. Preparatory training through education is provided in all areas of the industry—contractors, remodelers, cabinet makers, building inspectors, carpenters, and others.

A.A. and A.S. degrees as well as certificates can be earned in the Construction Technology Program. The Certificate Programs do not satisfy A.A. degree requirements but do qualify students for a certificate in the field of study.

MILL CABINET—A.A. OR A.S. DEGREE
Successful completion of the curriculum in Mill Cabinet qualifies students for entry into any type of cabinet making, for example, assembly line production, custom cabinet making, design and layout of cabinet and furniture, and repairing routine machine malfunctions (those used in wood shops). Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

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<tr>
<th>COURSE</th>
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<tr>
<td>C.T.C. 2 Machine Operations &amp; Jointery</td>
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</tr>
<tr>
<td>C.T.C. 3 Custom Cabinet Making</td>
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<td>C.T.C. 4 Cabinet Layout &amp; Estimating</td>
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<td>C.T.C. 5 Production Cabinet Making</td>
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<td>C.T.C. 9 Cabinet Doors &amp; Drawers</td>
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<td>C.T.C. 10 Cabinet Related Studies</td>
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<td>C.T.C. 22 Projects &amp; Design</td>
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<td>C.T.C. 24 Wood Finishing</td>
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<td>C.T.R. 44 Conventional Framing</td>
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<td>Electives from below</td>
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TOTAL UNITS REQUIRED: 31

CABINET MAKING CERTIFICATE
A Cabinet Making Certificate will qualify students for entry into any type of cabinet making, for example, assembly line production, custom cabinet making, and repairing routine wood shop machine malfunctions. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

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<tr>
<td>C.T.C. 1 Introduction to Cabinet Making</td>
<td>3</td>
</tr>
<tr>
<td>C.T.C. 2 Machine Operations &amp; Jointery</td>
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<tr>
<td>C.T.C. 3 Custom Cabinet Making</td>
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</tr>
<tr>
<td>C.T.C. 4 Cabinet Layout &amp; Estimating</td>
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</tr>
<tr>
<td>C.T.C. 5 Production Cabinet Making</td>
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</tr>
<tr>
<td>C.T.C. 9 Cabinet Doors &amp; Drawers</td>
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<tr>
<td>C.T.C. 10 Cabinet Related Studies</td>
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<tr>
<td>C.T.C. 24 Wood Finishing</td>
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<tr>
<td>C.T.R. 44 Conventional Framing</td>
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</tr>
<tr>
<td>Electives from below</td>
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</tbody>
</table>

TOTAL UNITS REQUIRED: 31

CARPENTRY CERTIFICATE
The Carpentry Certificate prepares students for entry-level positions in all areas of the building construction industry, such as carpentry and mobile home industry. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>C.T.R. 42 Foundations &amp; Floor Systems</td>
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<tr>
<td>C.T.R. 44 Conventional Framing</td>
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<tr>
<td>C.T.R. 45 Building Industry Analysis</td>
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<tr>
<td>C.T.R. 47 Residential Blueprint Reading</td>
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<tr>
<td>C.T.R. 48 Estimating</td>
<td>3</td>
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<tr>
<td>C.T.R. 60 Residential House Wiring &amp; Codes</td>
<td>3</td>
</tr>
<tr>
<td>C.T.R. 62 Plumbing Installation &amp; Design</td>
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PLUS 6 ADDITIONAL UNITS FROM:

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<td>C.T.C. 1 Introduction to Cabinet Making</td>
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</table>
C.T.C. 2 Machine Operations and Jointery .......................... 3
C.T.C. 3 Custom Cabinet Making ........................................ 3
C.T.C. 10 Cabinet Related Studies ...................................... 3
C.T.R. 35 Skill & Speed Development ................................. 3-6
C.T.R. 46 Construction Manufactured Products ....................... 3

TOTAL UNITS REQUIRED: 26

RESIDENTIAL BUILDING CONSTRUCTION—
A.A. OR A.S. DEGREE

The curriculum in Residential Building Construction prepares students for entry-level positions in all areas of the building construction industry, such as carpentry, mobile home industry, and estimating. It also satisfies up to two years of experience needed for the General Contractor’s license. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. or A.S. degree, see pages 42-43.

REQUIRED COURSES  UNITS
C.T.R. 42 Foundations & Floor Systems ............................. 3
C.T.R. 44 Conventional Framing ....................................... 3
C.T.R. 45 Building Industry Analysis ................................. 4
C.T.R. 47 Residential Blueprint Reading ............................ 1
C.T.R. 48 Estimating ..................................................... 3
C.T.R. 60 Residential House Wiring & Codes ....................... 3
C.T.R. 62 Plumbing Installation & Design ............................ 3

PLUS 15 ADDITIONAL UNITS FROM:
C.T.C. 1 Introduction to Cabinet Making ............................ 3
C.T.C. 2 Machine Operations and Jointery ........................... 3
C.T.C. 3 Custom Cabinet Making ....................................... 3
C.T.C. 5 Production Cabinet Making .................................. 3
C.T.C. 10 Cabinet Related Studies ..................................... 3
C.T.R. 28 Independent Study ............................................ 1-3
C.T.R. 35 Skill & Speed Development ................................. 3-9
C.T.R. 46 Construction Manufactured Products ....................... 3
C.T.R. 52 Residential Building Codes ................................ 3
C.T.R. 54 Uniform Building Codes .................................... 3
D.D. 11 Architectural Drawing I ....................................... 4
D.D. 12 Architectural Drawing II ..................................... 3

TOTAL UNITS REQUIRED: 35

CONSTRUCTION TECHNOLOGY
(CABINET COURSES)

C.T.C. 1 INTRODUCTION TO CABINET MAKING
Units: 3  Transfer: CSU
Hours: 6 (2 lecture, 4 laboratory)
Fundamentals of woodworking hand tools, power hand tools and woodworking machinery to develop safety, knowledge, and skills leading to cabinet work and furniture making. Emphasis on basic cabinet making construction details, nomenclature, drawers, guides, doors, and cabinet design with some introduction to computer aided cabinetry design.

C.T.C. 2 MACHINE OPERATIONS AND JOINTERY
Units: 3  Transfer: CSU
Hours: 6 (2 lecture, 4 laboratory)
Fundamentals of woodworking hand tools, power hand tools, and woodworking machinery to develop safety, knowledge and skills relating to jointery of furniture and cabinetry. Emphasis on basic furniture jointery, furniture case jointery, drawers, guides, nomenclature, panel lay-up and plastic laminates through assigned furniture/cabinet project.

C.T.C. 3 CUSTOM CABINET MAKING
Units: 3  Transfer: CSU
Prerequisite: Completion of C.T.C. 1
Hours: 6 (1 lecture, 5 laboratory)
Conventional cabinet construction revolving around extensive lab work and layout problems. Also includes custom production, the industrial processes, and blueprint reading. Cabinet vision estimating assigned and student initiated lab projects.
C.T.C. 4 CABINET LAYOUT AND ESTIMATING
Units: 4 Transfer: CSU
Prerequisite: Completion of C.T.C. 1
Hours: 4 lecture
Drawing of cabinet details, development of cabinet layout, and cabinet cost estimating; extensive problem solving and business aspects involved in managing a cabinet shop.

C.T.C. 5 PRODUCTION CABINET MAKING
Units: 3 Transfer: CSU
Prerequisite: Completion of C.T.C. 1 and C.T.C. 2
Hours: 6 (2 lecture, 4 laboratory)
Principles and practice in module cabinet construction, principles in jig making, production woodworking, mass manufacturing, and materials flow. Lab exercises assigned, and controlled student-initiated projects, as well as class completion of one full set of kitchen cabinets.

C.T.C. 9 CABINET DOORS AND DRAWERS
Units: 3 Transfer: CSU
Prerequisite: Completion of C.T.C. 1 or C.T.C. 2
Hours: 4 (2 lecture, 2 laboratory)
Design and construction details in a wide variety of cabinet doors and drawers. Course includes hinge systems, drawer guide systems, specialty hardware, and special convenience modules.

C.T.C. 10 CABINET RELATED STUDIES
Units: 3
Hours: 4 (2 lecture, 2 laboratory)
An introductory course with emphasis on three topics: laminated plastics and adhesives with cabinet faces and counter top fabrication; care and maintenance of woodworking machinery; and shop planning and development.

C.T.C. 22 PROJECTS AND DESIGN
Units: 3 Transfer: CSU
Prerequisite: Completion of C.T.C. 2
Hours: 6 (2 lecture, 4 laboratory)
Introduction in design and construction of wood products, to include wood identification and technology, joint selection and design, furniture construction details, advanced machine operation, care of tools and equipment, problem solving, laboratory assignments, and controlled student selection of major lab projects.

C.T.C. 23 ADVANCED PROJECTS AND DESIGN
Units: 3 Transfer: CSU
Prerequisite: Completion of C.T.C. 1 and C.T.C. 2
Hours: 6 (2 lecture, 4 laboratory)
Design and construction in furniture projects to include special design, special machine operations, problem solving, and student-selected laboratory projects.

C.T.C. 24 WOOD FINISHING
Units: 3 Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Designed for vocational students on techniques in removing finishes, repairs, surface preparation, stains and staining; spraying and brushing of sealers, plastics, lacquer, shading lacquer, and stains; care and maintenance of spray equipment, and production cabinet finishing methods. Lab assignment exercises along with choice of lab projects.

C.T.C. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

C.T.C. 35 SKILL AND SPEED DEVELOPMENT
Units: 3 Transfer: CSU
Prerequisite: Completion of C.T.C. 1 and C.T.C. 2
Hours: 6 (1 lecture, 5 laboratory)
Designed to further develop skill, speed, and experience capabilities for vocational certificate students in order to advance knowledge in premium construction in all phases of cabinet and furniture making. In-depth study of Woodwork Institute of California joint construction, extensive problem solving in the student-selected laboratory projects. May be taken four times for credit.

C.T.C. 36 COMPUTERIZED CABINET ESTIMATING AND DESIGN
Units: 3 Transfer: CSU
Hours: 4 (3 lecture, 1 laboratory)
Basic computer set-up and workings of cabinet estimating and design software installation. Includes basic DOS commands, material and standards set-up, developing elevation views, floor plans and three-dimensional forms, parts modification and/or creation through the draw routine or override parts options, printing of parts lists, use of panel vision for panel optimizing, and use of estimating software for bid proposals.

C.T.C. 37A ADVANCED SKILL & SPEED DEVELOPMENT-CABINET
Units: 3
Prerequisite: Completion of C.T.C. 35
Hours: 6 (1 lecture, 5 laboratory)
Designed to provide an advanced level of skill, speed, and experience for cabinetry students. Continued in-depth study of cabinetry construction such as doors, drawers, and box structures having intricate detail construction. Uses extensive problem solving in the completion of student-selected projects. May be taken four times for credit.
C.T.C. 37B ADVANCED SKILL & SPEED DEVELOPMENT—FURNITURE
Units: 3
Prerequisite: Completion of C.T.C. 35
Hours: 6 (1 lecture, 5 laboratory)
Designed to provide an advanced level of skill, speed, and experience for furniture students. Continued in-depth study of furniture construction such as doors, drawers, and case structures having intricate detail construction. Uses extensive problem solving in the completion of student-selected projects. May be taken four times for credit.

C.T.C. 95 INTERNSHIP IN CONSTRUCTION TECHNOLOGY—CABINET
Units: .5-4  Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

C.T.C. 300 SELECTED TOPICS IN CONSTRUCTION TECHNOLOGY—CABINET
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

C.T.R. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

C.T.R. 35 SKILL AND SPEED DEVELOPMENT IN RESIDENTIAL CONSTRUCTION
Units: 3  Transfer: CSU
Prerequisite: Completion of C.T.R. 42 and C.T.R. 44
Hours: 5 (2 lecture, 3 laboratory)
An advanced course designed to further develop skill, speed, and experience capabilities for the vocational student in all phases of residential construction. In-depth study of material acquisition, scheduling, production framing, detailed layouts, exterior and interior finish, and hardware installation. Also includes extensive problem solving and construction of a major lab project. May be taken four times for credit.

C.T.R. 37A ADVANCED SKILL & SPEED DEVELOPMENT—CONCRETE
Units: 3
Hours: 5 (2 lecture, 3 laboratory)
Designed to provide an advanced level of skill, speed, and experience for concrete students. Continued in-depth study of materials acquisition, scheduling, detailed layouts, forming for foundations or other applications using concrete as a base. Uses extensive problem solving in the completion of a department selected project. May be taken four times for credit.

C.T.R. 37B ADVANCED SKILL & SPEED DEVELOPMENT—FRAMING
Units: 3
Hours: 5 (2 lecture, 3 laboratory)
Designed to provide an advanced level of skill, speed, and experience for framing students. Continued in-depth study of materials acquisition, scheduling, detailed layouts for framing structures, to include floors, walls, rooms, and roofs. Uses extensive problem solving in the completion of a department selected project. May be taken four times for credit.
C.T.R. 42 FOUNDATIONS AND FLOOR SYSTEMS
Units: 3 Transfer: CSU
Advisory: Concurrent enrollment in C.T.R. 44 is recommended
Hours: 6 (2 lecture, 4 laboratory)
Understanding and building residential foundation and floor systems to include: plot layout, use of transit levels, foundation form layout and construction, pier layout, concrete work, and several floor systems. Also building codes as related to above. Selected lab assignments.

C.T.R. 44 CONVENTIONAL FRAMING
Units: 3 Transfer: CSU
Advisory: Concurrent enrollment in C.T.R. 42 is recommended
Hours: 6 (2 lecture, 4 laboratory)
Instruction and laboratory revolve around residential framing layout problems and construction to include: wall, ceiling, and roof systems; stair layout and construction; as well as exterior, interior, and roof surfaces. Construction of a major lab project.

C.T.R. 45 BUILDING INDUSTRY ANALYSIS
Units: 4 Transfer: CSU
Advisory: Completion of C.T.R. 42 and C.T.R. 44 recommended
Hours: 4 lecture
A general survey of the building industry and subcontractor trades to include: orientation, codes, zoning, construction sequence and labor/management relations, insurances, contracts, and legal paper.

C.T.R. 46 CONSTRUCTION MANUFACTURED PRODUCTS
Units: 3 Transfer: CSU
Hours: 6 (2 lecture, 4 laboratory)
Lectures and field trips focus on mass produced or assembly line operations as they relate to residential housing. Emphasis is on how the contractor or builder can take advantage of factory-built components or modules, component manufacturers, and the importance of their products in residential construction.

C.T.R. 47 RESIDENTIAL BLUEPRINT READING
Units: 1 Transfer: CSU
Corequisite: Must be taken concurrently with C.T.R. 48
Advisory: Completion of C.T.R. 42 and C.T.R. 44 or equivalent recommended
Hours: 1 lecture
An introduction to residential blueprint reading to include fundamentals of blueprint reading, symbols, dimensions, detail drawings, and specifications.

C.T.R. 48 ESTIMATING
Units: 3 Transfer: CSU
Corequisite: Must be taken concurrently with C.T.R. 47
Advisory: Completion of C.T.R. 42, 44, and 45 recommended
Hours: 3 lecture
An introduction to cost estimating to include material and labor costs calculations, specifications, problem solving, and bid preparations.

C.T.R. 52 RESIDENTIAL BUILDING CODES
Units: 3 Transfer: CSU
Hours: 3 lecture
Planning or building a light frame one- or two-story dwelling in conformance with the building code. Application of codes to existing buildings with a study of regulations and abatement procedures for dangerous or substandard buildings.

C.T.R. 54 UNIFORM BUILDING CODES
Units: 3 Hours: 3 lecture

C.T.R. 60 RESIDENTIAL HOUSE WIRING AND CODES
Units: 3 Transfer: CSU
Hours: 6 (2 lecture, 4 laboratory)
Instruction basic to the electrical wiring trade. Inside wiring as applied to residential structures. Use of tools and materials of the trade. Review of the National Electrical Code and the applications. Materials fee.

C.T.R. 62 PLUMBING INSTALLATION AND DESIGN
Units: 3 Transfer: CSU
Hours: 6 (2 lecture, 4 laboratory)
Instructions basic to the plumbing trade: planning, installing, and maintaining simple plumbing systems in accordance with good practice and in conformity to local codes and ordinances. Materials fee.

C.T.R. 80 COMMERCIAL WIRING AND CODES
Units: 3 Transfer: CSU
Hours: 3 lecture
Inside wiring as applied to commercial buildings. Use of tools and materials of the trade. Includes single-phase and three-phase wiring systems, feeder and branch circuit requirements and installations, lighting systems, and over-current protection. Review of National Electrical Code.
C.T.R. 82 INDUSTRIAL WIRING AND CODES
Units: 3  Transfer: CSU
Hours: 3 lecture
Inside wiring as applied to industrial buildings. Use of tools and materials of the trade. Includes grounding, panelboards, motor and motor controls, overcurrent protection, hazardous locations, fundamentals of programmable logic controllers. Review of National Electrical Code.

C.T.R. 95 INTERNSHIP IN CONSTRUCTION TECHNOLOGY—RESIDENTIAL
Units: .5-4  Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

C.T.R. 300 SELECTED TOPICS IN CONSTRUCTION TECHNOLOGY—RESIDENTIAL
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

C.T.R. 400 SELECTED TOPICS IN CONSTRUCTION TECHNOLOGY—RESIDENTIAL
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Deaf Studies

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
LIAISON COUNSELORS: S. Bramlett, B. Hancock, K. Parker, V. Skeels

The Deaf Studies curriculum provides students with the knowledge and skills of American Sign Language (ASL). It also focuses on the uniqueness of ASL as a language, of the Deaf culture, the history of the Deaf Community, of Deaf educational practices and the Interpreting profession. The curriculum is designed to assist students in determining which area of Deaf Studies to enter or to aid them in the area they are currently pursuing.

DEAF STUDIES: AMERICAN SIGN LANGUAGE—A.A. DEGREE OR CERTIFICATE
The Deaf Studies program offers courses leading to a certificate as well as an Associate in Arts degree. The Deaf Studies: American Sign Language degree program is designed to prepare students to transfer to a four-year baccalaureate program as a Deaf Studies major. The degree and certificate program helps develop Sign Language skills fluent enough to communicate as skilled signers for personal or work-related use. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43.

REQUIRED COURSES:
- DFST 1 American Sign Language I ......................... 4
- DFST 2 American Sign Language II ....................... 4
- DFST 3 American Sign Language III ..................... 4
- DFST 4 American Sign Language IV ...................... 4

PLUS 13 UNITS FROM THE FOLLOWING:
- DFST 5 Introduction to American Deaf History and Culture .... 3
- DFST 6 Introduction to Deaf Education .................. 3
- DFST 7 Principles of Sign Language Interpreting ........... 3
- DFST 8 Creative Sign ........................................ 2
- DFST 9A Numbers and Fingerspelling .................... 2
- DFST 9B Classifiers in ASL .................................. 2
- DFST 28 Independent Study .................................. 1-3
- DFST 95 Internship in Deaf Studies ....................... 5-4
Comm.St. 3 Group Communication .......................... 3

TOTAL UNITS REQUIRED: 29
DEAF STUDIES COURSES

DFST 1 AMERICAN SIGN LANGUAGE I
(FORMERLY COMM.ST. 51)
Units: 4   Transfer: CSU/UC
Hours: 4 lecture
Introduction to the fundamental principles of American Sign Language (ASL). Preparation for visual/gestural communication including basic information relating to Deaf culture, intensive work on comprehension skills and grammatical structures.

DFST 2 AMERICAN SIGN LANGUAGE II
(FORMERLY COMM.ST. 52)
Units: 4   Transfer: CSU/UC
Prerequisite: Completion of DFST 1
Hours: 4 lecture
Continuation of American Sign Language I (ASL I). Designed for students who wish to enhance their proficiency in ASL usage and stresses continued development of basic conversational skills with emphasis on vocabulary and expressive skills.

DFST 3 AMERICAN SIGN LANGUAGE III
(FORMERLY COMM.ST. 53)
Units: 4   Transfer: CSU/UC
Prerequisite: Completion of DFST 2
Hours: 4 lecture
Continuation of American Sign Language II (ASL II). Shifts from comprehension to production of ASL. Expanded vocabularies and grammatical patterns being exposed. Continues to develop ASL competencies in numerous conversational settings. Brings ASL fluency to a point of self-generated ASL for the purpose of furthering language use in ASL.

DFST 4 AMERICAN SIGN LANGUAGE IV
(FORMERLY COMM.ST. 54)
Units: 4   Transfer: CSU/UC
Prerequisite: Completion of DFST 3
Hours: 4 lecture

DFST 5 INTRODUCTION TO AMERICAN DEAF HISTORY AND CULTURE
(FORMERLY COMM.ST. 59)
Units: 3   Transfer: CSU/UC
Hours: 3 lecture
History of American Deaf culture, including descriptions of deafness, deaf people and the current Deaf community as defined by audiology and/or cultural means, services for and by deaf people and culture as reflected in the language of Deaf people. History from the 1800’s to present, including the study of prominent people such as T.H. Gallaudet, Laurent Clerc, I. King Jordan and others.

DFST 6 INTRODUCTION TO DEAF EDUCATION
(FORMERLY COMM.ST. 55)
Units: 3   Transfer: CSU
Hours: 3 lecture
Overview of the historical, philosophical, psychological and social aspects of deaf education. Orientation to problems, issues and research in the field of educating the deaf. Including general orientation to the Deaf community.

DFST 7 PRINCIPLES OF SIGN LANGUAGE INTERPRETING
(FORMERLY COMM.ST. 56)
Units: 3   Transfer: CSU
Hours: 3 lecture
Introduction to the profession of Sign Language interpreting. Includes history, definitions of interpreting, modes and methods, interpreter demand, professional standards and Code of Ethics, settings, evaluation, certification, legal mandates, employment and cultural related issues.

DFST 8 CREATIVE SIGN
(FORMERLY COMM.ST. 57)
Units: 2   Transfer: CSU
Prerequisite: Completion of DFST 1
Advisory: Completion of DFST 2 recommended
Hours: 2 lecture
Introduction to the techniques of facial expression, characterization, body movement, and spatialization as it relates to American Sign Language. Development of expressive sign language skills through the use of poetry, songs, skits, storytelling, jokes and slang signs.

DFST 9A NUMBERS AND FINGERSPELLING
(FORMERLY COMM.ST. 58A)
Units: 2   Transfer: CSU
Prerequisite: Completion of DFST 1
Advisory: Completion of DFST 2 recommended
Hours: 2 lecture
Advanced experiences and communication techniques with expressive and receptive fingerspelling and use of American Sign Language (ASL) number systems. Numbers will include, but are not limited to: cardinal, ordinal, informational numbers; numbers related to time, temporal aspects signs, measurements, sports and mathematical numbers.
DFST 9B CLASSIFIERS IN ASL
(FORMERLY COMM.ST. 58B)
Units: 2
Prerequisite: Completion of DFST 1
Advisory: Completion of DFST 2 recommended
Hours: 2 lecture
Advanced experiences and communication techniques with the use of classifiers. Focus on classifier types and functions. Identification of various classifiers and their use to enhance and expand American Sign Language ability.

DFST 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. May be taken four times for credit. See Independent Study page in catalog.

DFST 95 INTERNSHIP IN DEAF STUDIES
Units: .5-4
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of sign language, deaf education, special education, or sign language interpreting. Provides new on-the-job training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

DFST 300 SELECTED TOPICS IN DEAF STUDIES
Units: .5-4
Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Design Drafting

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara
DIVISION OFFICE: B 3
FACULTY: G. Anderson, S. Jung
LIAISON COUNSELORS: Reyes Ortega, V. Skeels

The Design Drafting curriculum is designed to prepare students for careers in industry as engineering support technicians who perform drafting and other related activities or as an avocational pursuit. Engineers require drafting skills as do architects and designers. Engineering support technicians are in demand throughout the nation, affording many employment opportunities for qualified individuals. The techniques of drafting are used in many types of industries such as automotive, electronics, building construction, aeronautical/aerospace, machine design, advertising, illustrating, landscape design, and engineering.

A.A. and A.S. degrees as well as certificates can be earned in the Design Drafting Program. The certificate programs do not satisfy A.A./A.S. degree requirements but do qualify students for a certificate in the field of study.

COMPUTER-AIDED DRAFTING SPECIALIST—
A.A. OR A.S. DEGREE OR CERTIFICATE
ARCHITECTURAL CONCENTRATION
Successful completion of the curriculum in Computer-Aided Drafting Specialist, Architectural Concentration, prepares students for entry-level positions as drafting technician, interior designer, kitchen/bath designer, and architectural illustrator. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

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<tr>
<th>COURSE</th>
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<tr>
<td>D.D. 8 Technical Drafting I</td>
<td>3</td>
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<tr>
<td>D.D. 9 Technical Drafting II</td>
<td>3</td>
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<tr>
<td>D.D. 11 Architectural Drawing I</td>
<td>4</td>
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<tr>
<td>D.D. 12 Architectural Drawing II</td>
<td>3</td>
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<tr>
<td>D.D. 35B Computer-Aided Drafting IB</td>
<td>3</td>
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<tr>
<td>D.D. 45 Managing the Computer-Aided Design (CAD) Environment</td>
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<tr>
<td>D.D. 65 Kitchen and Bath Design</td>
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<tr>
<td>D.D. 66 Introduction to Kitchen and Bath Design Software</td>
<td>2</td>
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<tr>
<td>D.D. 95 Internship in Design Drafting</td>
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<tr>
<td>C.T.R. 44 Conventional Framing</td>
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TOTAL UNITS REQUIRED: 27.5-31
Recommended Electives: C.T.R. 42, 47, 48, 52

COMPUTER-AIDED DRAFTING SPECIALIST—
A.A. OR A.S. DEGREE OR CERTIFICATE
MECHANICAL/CIVIL CONCENTRATION
The Computer-Aided Drafting Specialist, Mechanical/Civil Concentration, prepares students for entry-level positions as draft-
ing technician, engineering aide, and detailer. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.D. 8 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 9 Technical Drafting II</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 20 Industrial and Civil Applications of Computer-Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 35B Computer-Aided Drafting IB</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 39 Three-Dimensional Modeling</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 40 Geometric Dimensioning and Tolerancing</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 45 Managing the Computer-Aided Design (CAD) Environment</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 95 Internship in Design Drafting</td>
<td>.5-4</td>
</tr>
<tr>
<td>Engin. 23 Engineering Graphics—Descriptive Geometry</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 24.5-28**

**DRAFTING ESSENTIALS SKILLS CERTIFICATE**

Designed to give students the basic drafting support knowledge and abilities required to enter the workforce at an entry level. Focuses on skills relative to the fields of architecture and mechanical computer-aided drafting (CAD). Appropriate for students seeking retraining. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.D. 8 Technical Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 9 Technical Drafting II</td>
<td>3</td>
</tr>
<tr>
<td>D.D. 11 Architectural Drawing I</td>
<td>4</td>
</tr>
<tr>
<td>D.D. 20 Industrial and Civil Applications of Computer-Aided Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 13**

**CAD ENVIRONMENT MANAGEMENT SKILLS CERTIFICATE**

The CAD Environment Management Skills Certificate will expose students to the issues related to managing a CAD environment. Students will learn the basics of computer hardware, configuration, and networking. They will develop a functional understanding of the role that standards play in the successful management of a CAD environment. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.D. 45 Managing the Computer-Aided Design (CAD) Environment</td>
<td>3</td>
</tr>
<tr>
<td>C.I.E. 25 Personal Computer Configuration and Repair (Also C.S.T. 25)</td>
<td>4</td>
</tr>
<tr>
<td>C.I.S. 50 Applying Computer Software</td>
<td>3</td>
</tr>
<tr>
<td>C.S.T. 40 Local Area Networks (Also C.S. 65)</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 13**

**DESIGN DRAFTING COURSES**

**D.D. 8 TECHNICAL DRAFTING I**

<table>
<thead>
<tr>
<th>Units</th>
<th>Transfer: CSU</th>
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<tbody>
<tr>
<td>Hours: 5 (2 lecture, 3 laboratory)</td>
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</tbody>
</table>

Fundamental use of design equipment to create both two dimensional technical sketches and two and three dimensional computer generated working drawings that are used for product definition. Introduction to product and process definition as specified by engineering design disciplines. Designed for students with no previous experience in engineering design/drafting.

**D.D. 9 TECHNICAL DRAFTING II**

<table>
<thead>
<tr>
<th>Units</th>
<th>Transfer: CSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours: 5 (2 lecture, 3 laboratory)</td>
<td></td>
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</tbody>
</table>

Intermediate concepts of engineering design including sections, auxiliaries, threads, fasteners, and dimensional tolerancing. Basic concepts of Geometric Dimensioning and Tolerancing. Design for Manufacturability and Assembly explored to include material selection and properties of materials. Designed for students who have attained a fundamental knowledge of the processes and practices of engineering design/drafting.

**D.D. 10 TECHNICAL DRAFTING III (FORMERLY D.D. 6)**

<table>
<thead>
<tr>
<th>Units</th>
<th>Transfer: CSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours: 5 (2 lecture, 3 laboratory)</td>
<td></td>
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</tbody>
</table>

Application of processes and practices for technical drawing/drafting developed in D.D. 8 and D.D. 9. Skills applied to drawings used in the areas of welding, structural steel detailing, cam and gear development. Tolerance dimensioning stressed and applied to engineering drawings. Practices and processes for measurement, gauging and common manufacturing processes examined. Parametric solid modeling concepts introduced. Designed for students who have attained an intermediate knowledge of the processes and practices of engineering design/drafting.

**D.D. 11 ARCHITECTURAL DRAWING I**

<table>
<thead>
<tr>
<th>Units</th>
<th>Transfer: CSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours: 8 (2 lecture, 6 laboratory)</td>
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</tbody>
</table>

Introduction to the fundamentals of residential construction and its design. Drawings of a residence are designed and completed, to include sketches, plot and floor plans, foundation, elevations, schedules, framing, electrical, plumbing, and section views.
D.D. 12 ARCHITECTURAL DRAWING II
Units: 3       Transfer: CSU
Prerequisite: Completion of D.D. 11 or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Continuation of the residential design started in D.D. 11 to include major detailing to conform to the Uniform Building Code (UBC) and local county codes. Drawings to include; fireplaces, stairs, interiors, mechanical specifications, Title 24, a two-point perspective drawing and 3D scale model.

D.D. 20 INDUSTRIAL AND CIVIL APPLICATIONS OF COMPUTER-AIDED DESIGN
Units: 3       Transfer: CSU
Prerequisite: Completion of D.D. 9 or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Skills applied to drawings used in the areas of mechanical and civil engineering support. Tolerance dimensioning stressed and applied to engineering drawings. Practices and processes for measurement and gauging. Emphasis on land division, determination of location and direction, development of plots based upon legal description and the fundamentals of surveying as applied to preliminary and final maps. Designed for students who have attained an intermediate knowledge of the processes and practices of engineering design/drafting support.

D.D. 28 INDEPENDENT STUDY
Units: 1-3       Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

D.D. 35A COMPUTER-AIDED DRAFTING IA
Units: 3       Transfer: CSU
Prerequisite: One year high school drafting or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Introduction to the use of computer-aided drafting/design systems to include hardware and software. Emphasis on the production of two-dimensional working drawings. Designed for disciplines that require computer-aided drafting skill sets, such as architectural studies, mechanical engineering, civil engineering, landscape, fashion, interior design, technical theater, and geographical information systems (GIS).

D.D. 35B COMPUTER-AIDED DRAFTING IB
Units: 3       Transfer: CSU
Prerequisite: Completion of D.D. 35A, or D.D. 8 and D.D. 9 or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Continuation of D.D. 35A. Application of advanced computer-aided drafting (CAD) features to produce 2D and 3D working drawings. Emphasis on attribute extraction, data interchange file (DXF), file translation, and external referencing. Introduction to wire-frame, surface and solid modeling.

D.D. 39 THREE-DIMENSIONAL MODELING
Units: 3       Transfer: CSU
Prerequisite: Completion of D.D. 35A; or D.D. 8 and D.D. 9; or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Processes employed in developing design solutions using a feature based parametric solid modeler. Includes part and assembly modeling, and the development of 2-dimensional part and assembly drawings. SolidWorks is the solid modeler used.

D.D. 40 GEOMETRIC DIMENSIONING AND TOLERANCING
Units: 3       Transfer: CSU
Prerequisite: Completion of D.D. 9 or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Course expands upon basic knowledge of dimensioning mechanical drawings by adding form and feature controls in order to clearly define parts. Review of basic dimensioning and tolerancing. Topics, as defined in ANSI Y14.5M-1994 Standard, include geometric tolerancing symbols and terms, rules of geometric dimensioning and tolerancing, datums, material condition symbols, tolerances of form and profile, tolerances of orientation and runout, location tolerances and virtual condition.

D.D. 45 MANAGING THE COMPUTER-AIDED DESIGN (CAD) ENVIRONMENT
Units: 3
Prerequisite: Completion of D.D. 9 or equivalent
Hours: 3 lecture
Explores the role of the Computer-Aided Design (CAD) manager. Details on how to create and institute CAD standards, policies, and procedures. Topics include the impact of computer networking, Internet, and Extranets on the CAD environment.
D.D. 64 INTRODUCTION TO DIGITAL GRAPHICS
Units: 3 Transfer: CSU
Prerequisite: Completion of D.D. 35A; or D.D. 9; or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Development of digital skills in the rendering of vector based graphic objects through experimentation with varied materials, media, and computer software. Application will consist of hand and computer renderings for presentations.

D.D. 65 KITCHEN AND BATH DESIGN
Units: 3 Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Fundamentals of designing, drawing, and rendering kitchens and bathrooms for both remodeling and new construction. Topics include applications of cabinets, fixtures, appliances, countertops, flooring, wall treatment, lighting, plumbing, electrical, and heating.

D.D. 66 INTRODUCTION TO KITCHEN AND BATH DESIGN SOFTWARE
Units: 2 Advisory: Completion of C.I.S. 30
Hours: 3 (2 lecture, 1 laboratory)
Use of kitchen and bath design software to design, manage, and cost out kitchen and bath solutions. Creation of presentation drawings, cut sheets, floor plans, fixture and cabinet style selections for the design.

D.D. 90 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS)(ALSO GEOG90)
Units: 3 Transfer: CSU
Hours: 4 (3 lecture, 1 activity)
Interdisciplinary course to explore Geographic Information Systems (GIS) as used in the organization, analysis, and communication of spatial information. Explores how GIS is used in numerous fields to map and solve spatial problems, such as those in natural resources, earth and life sciences, environmental planning, local government, business and marketing, transportation, and others.

D.D. 95 INTERNSHIP IN DESIGN DRAFTING
Units: .5-4 Transfer: CSU*
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of architectural, mechanical, civil or any other drafting function. Provides new on-the-job technical training under the direction of a worksite supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

D.D. 300 SELECTED TOPICS IN DESIGN DRAFTING
Units: .5-4 Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Drama

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: D. Hammond, M. Hunter
liaison COUNSELORS: C. Epting-Davis, N. Martinis, V. Rogers

The Drama Department offers training, both theoretical and practical, in theatrical production, including performance, technical and business management aspects, as well as the serious study of the development of those aspects from the early Greeks up to the bright lights of Broadway. We believe that the creativity, the personal interaction, and the excitement of participating in a performance is an experience highly valuable to any individual. The heightened awareness of beauty and truth are carried on into the later life of the student to perhaps enable him or her to appreciate more fully what is available.

It is recommended that students intending to major in this field take all courses offered by this department, plus Communicative Arts in the Communication Studies Department. Introductory music, art, and dramatic literature courses would also be valuable.

TRANSFER MAJOR REQUIREMENTS in Drama are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Drama are qualified are teaching, community theater, television, motion pictures, and professional theatre.

DRAMA COURSES

DRAMA 10A FUNDAMENTALS OF ACTING
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Analysis and practice of acting techniques: interpretation, pantomime, and oral expression. Characterization through improvisation and selected scenes. (CAN DRAM 8)
DRAMA 10B ADVANCED ACTING
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of Drama 10A or equivalent
Hours: 3 lecture
Analysis and practice in major styles of acting with particular emphasis on the realistic convention. Activities will include one or more acting projects, monologues, scenes, and participation in a play.

DRAMA 11 STAGE MOVEMENT
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Analysis and practice of movement styles used in the theater; basic movement, combat, relaxation, and interpretation. Character development through physical exploration and scene study.

DRAMA 12 APPLIED DRAMA
Units: 1  Transfer: CSU/UC
Hours: As scheduled for a total of 80 activity hours
Participation in dramatic productions either as a performer or as a technical assistant. Requires approximately 60 hours rehearsal and 20 hours performance. May be taken four times for credit.

DRAMA 13 INTRODUCTION TO THEATER
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
A study of plays, their production and performance, in the major periods of dramatic art. Designed for both majors and nonmajors interested in acquiring an appreciation of theater as a performing art.

DRAMA 14 STAGECRAFT
Units: 3  Transfer: CSU/UC
Hours: 5 (1 lecture, 4 activity)
Set construction, painting, and techniques of mounting and shifting stage scenery. Theater architecture, rigging, and machinery. (CAN DRAM 12)

DRAMA 15 STAGE LIGHTING
Units: 3  Transfer: CSU/UC
Hours: 5 (1 lecture, 4 activity)
Basic execution of theatrical lighting. Study of electrical principles, lighting instruments, and control equipment. (CAN DRAM 10)

DRAMA 16A COSTUME HISTORY
(FORMERLY DRAMA 16)
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Costumes from Egyptian period to the present. Emphasis on the use of historical costumes for the stage. Costume design project for period play. Designed for both theater majors and non-majors who are interested in acquiring an appreciation of apparel through history.

DRAMA 16B COSTUME CONSTRUCTION
Units: 3  Transfer: CSU/UC
Hours: 5 (1 lecture, 4 activity)
Study and implementation of stage costume construction techniques, from pattern drafting and fabric selection to sewing, serging, fitting, draping, and dyeing.

DRAMA 17 MAKEUP
Units: 2  Transfer: CSU/UC
Hours: 3 (1 lecture, 2 activity)
Theory and practical application of stage makeup including crew work on major productions. Discussion and criticism of student projects. Additional hours may be assigned. (CAN DRAM 14)

DRAMA 19A STAGE PROPERTIES
(FORMERLY DRAMA 19)
Units: 3  Transfer: CSU/UC
Hours: 5 (1 lecture, 4 activity)
Study of stage properties including locating and construction props. Implementation of construction techniques; use and examination of common, unusual and specialized materials. Includes period research for prop implementation and identification.

DRAMA 19B SCENIC PAINTING
Units: 3  Transfer: CSU/UC
Hours: 5 (1 lecture, 4 activity)
Scenic painting including mixing and matching paints, painting practices and standards. Implementation of painting techniques; use and theory of common, specialized and experimental materials.

DRAMA 20 PLAY, PERFORMANCE, AND PERCEPTION
Units: 3  Transfer: CSU/UC*
Hours: 3 lecture
Read and attend theater performances presented throughout the region. Pre-performance analysis and post-performance critiques and discussion. Geared for both theater majors and non-majors interested in the theater performance experience.

DRAMA 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.
DRAMA 300 SELECTED TOPICS IN DRAMA
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

E.SCI. 14 NATURAL DISASTERS
Units: 3  Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11 or equivalent strongly recommended
Hours: 3 lecture
Analysis of the principles underlying natural disasters such as earthquakes, volcanic eruptions, landslides, floods, severe weather, fires and their impact on the environment and human populations.

E.SCI. 15 INTRODUCTION TO OCEANOGRAPHY
Units: 3  Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
Physical, chemical, and biological aspects of our ocean environment with emphasis on geologic processes.

E.SCI. 15L INTRODUCTION TO OCEANOGRAPHY LABORATORY
Units: 1  Transfer: CSU/UC
Prerequisite: Completion of or concurrent enrollment in Earth Science 15
Hours: 3 laboratory
Exploration of the ocean environment, including physical, chemical and biological aspects. Learning through investigation and systematic laboratory procedures. Laboratory hours partially fulfilled by required overnight weekend field trips to coastal areas.

E.SCI. 16D PT. REYES: SEASHORE GEOLOGY
Units: .5  Transfer: CSU
Hours: As scheduled (2-day field trip) for a total of 21 hours (3 lecture, 18 laboratory)
A two-day overnight field exploration of Point Reyes National Seashore with emphasis on coastal geology. For science and non-science majors.

E.SCI. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

E.SCI. 300 SELECTED TOPICS IN EARTH SCIENCE
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Earth Science
(ALSO SEE GEOGRAPHY AND GEOLOGY)

SCiences & Mathematics
Dean: Karen Walters Dunlap
Associate Dean: Vacant
Division Office: Ht 4
Faculty: A. Amigo, F. DeCourten, H. Dodson, R. Hilton
Liaison Counselor: C. West

These courses give a general educational background of the earth’s geology, atmosphere, oceans, and its place in time and space.

Transfer Major Requirements are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and Counseling Center. Positions for which four-year graduates in the disciplines in Earth Science are qualified include teaching, research, industry, regional planning, environmental analysis and others in the minerals-fuels industries.

Earth Science Courses

E.SCI. 10 INTRODUCTION TO EARTH SCIENCE
Units: 3  Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
Broad introduction to fundamental concepts of geology, oceanography, meteorology, and astronomy for science and nonscience majors.

E.SCI. 10L INTRODUCTION TO EARTH SCIENCE LABORATORY
Units: 1  Transfer: CSU/UC*
Prerequisite: Completion of or concurrent enrollment in Earth Science 10
Hours: 3 laboratory
Exploration of the solid Earth, its atmosphere, oceans, and place in the solar system. Learning through investigation and systematic laboratory procedures.
Economics

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: D. Auslam, S. Spencer
LIAISON COUNSELORS: K. Bray, C. West

Economics is the academic discipline that deals with the way societies produce and consume goods and services. As a descriptive discipline, it is concerned with accurate portrayals of national economies, as well as those of regions, firms, and individuals. As an analytical discipline its tools are used to order, modify, and describe economic activity.

TRANSFER MAJOR REQUIREMENTS in Economics are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Economics are qualified are found in government service, banking, and industry.

ECONOMICS COURSES

ECON. 1A FUNDAMENTALS OF ECONOMICS
Units: 3  Transfer: CSU/UC
Advisory: Completion of Math. A or equivalent recommended
Hours: 3 lecture
The basic foundations of MACRO-economic analysis; national income accounting, employment, and economic growth; money and banking; monetary and fiscal policy. (CAN ECON 2)

ECON. 1B FUNDAMENTALS OF ECONOMICS
Units: 3  Transfer: CSU/UC
Advisory: Completion of Math. A or equivalent recommended
Hours: 3 lecture
MICRO-economics. Supply and demand as it relates to individual firms in the market. The pricing and employment of resources; the use of analytical tools. Includes study of international economics. (CAN ECON 4)

ECON. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ECON. 300 SELECTED TOPICS IN ECONOMICS
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Education

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
LIAISON COUNSELORS: E. Dickson, N. Martinis

The Education Department is undergoing some changes and revisions with the emphasis being placed on the needs of the Liberal Studies program. As an example, Education 10, Introduction to Elementary Education, has been developed to fulfill one of the early field experience requirements for the blended Liberal Studies program at California State University, Sacramento. The Education discipline, while presently focusing on courses for the Liberal Studies major, will offer other courses in classroom teaching and pedagogy in the future.

EDUCATION COURSES

ED. 7 TUTORING ELEMENTARY STUDENTS
IN READING (ALSO ENGLISH 7)
Units: 3  Transfer: CSU
Prerequisite: Completion of English 50 with a grade of “C” or better or placement by matriculation assessment
Hours: 5 (2 lecture, 3 laboratory)
An opportunity to learn and practice basic methods of tutoring elementary school children in reading. Combines lecture/discussion with field experience doing extensive tutoring at local elementary school. Negative TB test and fingerprint clearance required. Satisfies one of the two required field experience courses for the CSUS Blended Teacher Preparation Program.
ED. 10 INTRODUCTION TO ELEMENTARY EDUCATION WITH FIELD EXPERIENCE

Units: 3
Advisory: Completion of Human Development 1
Hours: 5 (2 lecture, 3 laboratory)
Explores the career of elementary school teaching during weekly class meetings and supervised field work in a local elementary school. Covers the profession and culture of teaching, observation skills, communication skills, diversity and social issues. Requires completion of a service learning project at participating schools. Fulfills one of the early field experiences for the CSUS blended studies major. Negative TB test and fingerprint screening will be required.

ED. 28 INDEPENDENT STUDY

Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ED. 95 INTERNSHIP IN EDUCATION

Units: .5-4
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for Fall and Spring semester internships, or at least one other course for summer internships
Designed for students who wish to explore a specific area of education, such as teaching at the elementary, high school, or college level, counseling or education administration. Available to students in any major. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

Electronics Technology
(SEE COMPUTER INTEGRATED ELECTRONICS)

Engineering

SCIENCE & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: M. Barron, D. Harris, D. Hill, A. Wong
liaison counselors: Reyes Ortega, B. Ruud

The Engineering Department offers all the courses satisfying the lower division engineering requirements of most California colleges and universities. Students may profitably begin their study of chemical, civil, electrical, or mechanical engineering at Sierra College. Job openings abound in many engineering fields.

TRANSFER MAJOR REQUIREMENTS in Engineering are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Engineering are qualified are research, building industry, manufacturing, and business.

ENGINEERING—A.A. OR A.S. DEGREE

The Engineering major recognizes a concentration in the field of Engineering. Successful completion of the curriculum in Engineering prepares Engineering students for transfer to four-year colleges or universities. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES UNITS
Math. 30 Analytical Geometry & Calculus ................. 4-5
Math. 31 Analytical Geometry & Calculus .................. 4
Math. 32 Analytical Geometry & Calculus .................. 4
Physics 4B Principles of Physics OR
Physics 4C Principles of Physics .......................... 4
Chem. 1A General Chemistry OR
Chem. 3A-3B General Chemistry ......................... 5-6
Engin. 35 Statics .......................................... 3
Engin. 45 Materials Science .............................. 3

PLUS 6 UNITS FROM:
Math. 33 Differential Equations & Linear Algebra .......... 6
Chem. 1B General Chemistry ................................ 5
Engin. 17 Introduction to Circuit Theory ................... 3
Engin. 17L Circuit Theory Laboratory ....................... 1
Engin. 23 Engineering Graphics I .......................... 3
Engin. 150 Careers in Engineering ........................ 5
Physics 4B Principles of Physics OR
Physics 4C Principles of Physics .......................... 4

TOTAL UNITS REQUIRED: 33-35

ENGINEERING COURSES

ENGIN. 10 ENGINEERING SURVEY MEASUREMENTS
Units: 4
Prerequisite: Completion of Math. 8 or equivalent with a grade of “C” or better
Hours: 6 (3 lecture, 3 laboratory)
Theory and practice with transits, leveling instruments, tapes, and theodolites. Problems in differential leveling, traverse adjustment, area within irregular boundaries. Horizontal and vertical curves, topographic surveying, and astronomical observations. Designed for engineering students and is usually required for Civil Engineering majors. (CAN ENGR 10)
ENGIN. 17 INTRODUCTION TO CIRCUIT THEORY
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of or concurrent enrollment in Physics 4B and Math 33
Hours: 3 lecture
Introduction to circuit analysis. Includes the basic circuit elements; network differential equations; response of simple circuits, natural and forced; steady state sinusoidal circuit analysis development from the network differential equations. (CAN ENGR 12)

ENGIN. 17L CIRCUIT THEORY LABORATORY
Units: 1  Transfer: CSU/UC
Prerequisite: Completion of or concurrent enrollment in Engin. 17
Hours: 3 laboratory
Optional laboratory in conjunction with Engineering 17.

ENGIN. 23 ENGINEERING GRAPHICS—DESCRIPTIVE GEOMETRY
Units: 3  Transfer: CSU/UC
Hours: 7 (1 lecture, 6 laboratory)
Fundamental principles of descriptive geometry with application to technical drawing and engineering problems. Visualizing spatial relationships from orthographic drawings. Includes instrument drawings and computer-aided drafting (CAD) projects. Designed for Engineering and Design Drafting majors. (CAN ENGR 2)

ENGIN. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ENGIN. 35 STATICS
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of Physics 4A or equivalent
Advisory: Completion of Engin. 23 recommended
Hours: 3 lecture
Force systems and equilibrium conditions applied to engineering problems. Includes graphical solutions and diagrams to aid analytical solutions. Information on analytical mechanics, development of skills to analyze and solve problems in statics encountered in engineering work. (CAN ENGR 8)

ENGIN. 45 MATERIALS SCIENCE
Units: 3  Transfer: CSU/UC
Prerequisite: Chem. 1A (may be taken concurrently) and completion of Physics 4A or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Study of physical and chemical properties of engineering materials in relation to their atomic, molecular, and crystal structures. Application of basic principles to the selection and use of materials. Metals, ceramics, natural and synthetic organic, and aggregate materials are considered. (CAN ENGR 4)

ENGIN. 150 CAREERS IN ENGINEERING
Units: .5  Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Exploration of careers in engineering. Includes orientation to the academic program at Sierra College, employment opportunities, career pathways, educational planning for associate degree, certificate and transfer. Research of labor market and occupational information.

English
LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: B. Abrams, L. Atoms, B. Battenberg, R. Bocchicchio, Bright Rope, A. Clarke, I. Cooper, C. Eisenhower, A. Fleischmann, J.
LIAISON COUNSELORS: P. Neal, V. Rogers

The Department of English faculty subscribes to the idea that the language and literary arts are a basic and a chief way of discovering who we are, especially if “we” is defined broadly to take in the whole of past and present culture as it resides in the English language. We offer students the means of appreciating excellence in the literary language of the past and of developing excellence in their present uses of language. We believe that this experience can enhance a sense of personal identity as that sense is put in relation to “our” manifestations of identity in the past.

TRANSFER MAJOR REQUIREMENTS in English are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for the transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

ENGLISH—A.A. DEGREE
The English major is awarded for concentrated study in English with an emphasis on literature. Successful completion of the curriculum in English will prepare students for transfer to four-year colleges or universities. The major has been designed to
meet lower-division requirements for English majors at most transfer institutions. Students should choose the emphasis or track appropriate to their transfer institution or areas of interest. In all cases, students should consult with a counselor before selecting the core or elective courses to meet the requirements of the transfer institution.

**CORE COURSE:**
English 1B Critical Thinking and Writing about Literature ....... 3

**PLUS 3 UNITS FROM THE FOLLOWING:**
English 30A American Literature—Beginnings through Civil War. 3
English 30B American Literature—Civil War to the Present .......

**PLUS 3 UNITS FROM THE FOLLOWING:**
English 46A English Literature ........................................ 3
English 46B English Literature ........................................ 3

**PLUS 3 UNITS FROM THE FOLLOWING:**
English 29 Introduction to Drama as Literature ................. 3
English 32 Introduction to Poetry ..................................... 3
English 34 Introduction to the Novel ................................ 3

**PLUS 9 UNITS FROM OTHER COURSES LISTED ABOVE OR FROM:**
English 19 Introduction to Creative Writing ..................... 3
English 20 Creative Writing (Poetry) ................................ 3
English 21 Creative Writing (Prose Fiction) ....................... 3
English 24 Reading Literature: Introduction to Critical Issues and Concepts .................................................. 3
English 25 African-American Literature ............................. 3
English 26 Introduction to Native American Literature .......... 3
English 27 Literature by Women ....................................... 3
English 33 Introduction to Shakespeare (The Drama) ........... 3
English 37 American Film Masterpieces ............................ 3
English 38 International Film Masterpieces ....................... 3
English 40 The Filmed Novel ......................................... 3
English 42 The Documentary Film .................................... 3
English 43 Introduction to California Literature .................. 3
English 47A World Literature ........................................... 3
English 47B World Literature ........................................... 3
English 48 Literature of Science Fiction ............................. 3
Hum. 20 Introduction to the Old Testament ...................... 3
Hum. 21 Introduction to the New Testament .................... 3

**TOTAL UNITS REQUIRED: 21**

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**ENGLISH COURSES**

**ENGLISH A MECHANICS AND BASIC COMPOSITION**
Units: 3
Prerequisite: Placement by matriculation assessment process OR completion of English 501 with a grade of “C” or better
Hours: 3 lecture
Reviews essay organization and development, sentence structure, usage, punctuation, and mechanics. Includes writing a variety of paragraphs, essays and other assignments to a minimum of 4,000 words. A departmental proficiency essay exam is required for successful completion. For students who need review to become eligible for English 1A. Not open to students who have completed English N.

**ENGLISH N INTEGRATED READING AND COMPOSITION**
Units: 6
Prerequisite: Completion of English 570 and 501 with grades of “C” or better, or placement by matriculation assessment process
Hours: 6 lecture
Introduction to college level reading and writing, emphasizing them as interrelated processes. Focuses on strategies to improve comprehension, including vocabulary development, textual analysis, analysis of main ideas, tone, bias, inference. Reviews essay organization and development, sentence structure, usage, punctuation, mechanics. Includes reading and writing a variety of paragraphs and essays. Departmental proficiency essay exam required for successful completion. Course equivalent to English A and English 50, combined. Not open to students who have completed English A and/or 50.

**ENGLISH 1A INTRODUCTION TO COMPOSITION**
Units: 3
Transfer: CSU/UC
Prerequisite: Placement by matriculation assessment process OR completion of English A or E.S.L. 30W with a grade of “C” or better
Hours: 3 lecture/discussion
Study of the essay, with the concurrent development of rhetorical skills necessary to critical reading and effective writing. (CAN ENGL 2)(With English 1B, CAN ENGL SEQ A)
ENGLISH 1B CRITICAL THINKING AND WRITING ABOUT LITERATURE
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of English 1A or E.S.L. 40W with a grade of “C” or better
Hours: 3 lecture
Critical thinking and writing about literature. Develops critical thinking, reading, and writing skills applicable to the analysis of prose, poetry, drama, and criticism from diverse cultural sources and perspectives. Emphasis on the techniques and principles of effective written argument. Some research required. (CAN ENGL 4) (With English 1A, CAN ENGL SEQ A)

ENGLISH 1C CRITICAL THINKING AND WRITING ACROSS THE CURRICULUM
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of English 1A or E.S.L. 40W with a grade of “C” or better
Hours: 3 lecture
Critical thinking and writing across the curriculum. Develops critical thinking, reading, and writing skills as they apply to textual analysis of primary and secondary essays, articles, and book-length works from a range of academic and cultural contexts. Emphasis on the techniques and principles of effective written argument in research-based writing across the curriculum.

ENGLISH 2 STRUCTURE OF ENGLISH
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of English 1A with a grade of “C” or better
Hours: 3 lecture
Study of structure of English grammar, especially relating to writing. Introduction to terminology and structure of traditional grammar; analysis of standard rules for agreement, punctuation, pronoun reference, etc.; introduction to history of English language and varied methods of language acquisition among culturally diverse populations. For students who plan to teach or who are particularly interested in grammar as it relates to writing. Intended to meet CSUS requirement for Liberal Studies major.

ENGLISH 7 TUTORING ELEMENTARY STUDENTS IN READING (ALSO ED. 7)
Units: 3  Transfer: CSU
Prerequisite: Completion of English 50 with a grade of “C” or better or placement by matriculation assessment
Hours: 5 (2 lecture, 3 laboratory)
An opportunity to learn and practice basic methods of tutoring elementary school children in reading. Combines lecture/discussion with field experience doing extensive tutoring at local elementary school. Negative TB test and fingerprint clearance required. Satisfies one of the two required field experience courses for the CSUS Blended Teacher Preparation Program.

ENGLISH 11 ANALYTICAL AND CRITICAL THINKING IN READING
Units: 3  Transfer: CSU
Prerequisite: Placement by matriculation assessment process OR completion of English 50 with a grade of “C” or better
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Designed to assist students in logical and critical examination of texts and other printed material. Emphasizes instruction in the principles of critical thinking, logic and fallacies, reasoning strategies, author’s purpose and bias, research evaluation, propaganda, advertising, and reading for academic purpose.

ENGLISH 12 WRITING IN THE WORKPLACE
Units: 3  Transfer: CSU
Prerequisite: Placement by matriculation assessment process OR completion of English A or E.S.L. 30W with a grade of “C” or better
Hours: 3 lecture
Principles and practices of workplace writing. Includes organizing, writing, and revising clear, readable documents for the workplace, such as letters, memos, summaries, trip, incident, and progress reports, instructions, and graphs.

ENGLISH 19 INTRODUCTION TO CREATIVE WRITING
Units: 3  Transfer: CSU/UC*
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Composition of imaginative writing, with reading assignments of literary models in poetry, fiction, and drama. Includes analysis of the models as well as discussion and criticism, in a workshop mode, of original student poems, fiction, and plays. (CAN ENGL 6)

ENGLISH 20 CREATIVE WRITING (POETRY)
Units: 3  Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Writing poetry, with reading assignments of literary models in classical, modern, and contemporary poetry. Includes analysis of the models as well as discussion and criticism, in a workshop mode, of original student poems.

ENGLISH 21 CREATIVE WRITING (PROSE FICTION)
Units: 3  Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Writing prose fiction, with reading assignments of literary models in short story and/or novel. Includes analysis of the models as well as discussion and criticism, in a workshop mode, of original student prose.
ENGLISH 24 READING LITERATURE: INTRODUCTION TO CRITICAL ISSUES AND CONCEPTS
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
An introduction to the issues, concepts, and contexts central to literary interpretation, with particular concentration on the relationships of culture, politics (including issues of race, gender, and class), history, aesthetics to literary meaning and form.

ENGLISH 25 AFRICAN-AMERICAN LITERATURE
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Introduction to African-American literature from the late 18th century to the present, including fiction and non-fiction narrative, poetry, and drama. Exploration of literary structure, themes, social, literary, and artistic contexts, including the history and development of American literary identity.

ENGLISH 26 INTRODUCTION TO NATIVE AMERICAN LITERATURE
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
A thematic approach to Native American literature, focusing on the continuity and diversity of Native American literature from oral traditions to contemporary Native American writers.

ENGLISH 27 LITERATURE BY WOMEN
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Critical analysis and historical survey of selected works by women from Middle Ages to the present. Emphasizes British and American cultural foundations and literary traditions to further examine the universal and intercultural dynamic of gender roles, personal identity, and political consciousness.

ENGLISH 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ENGLISH 29 INTRODUCTION TO DRAMA AS LITERATURE
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Introduction to drama as literature emphasizing the critical analysis of individual plays; the analysis and exploration of the social, historical, and critical contexts of the writing and performance of dramatic literature; and exploration and analysis of the changing nature of its performance and reception. Class will explore significant works of drama from a variety of cultures and historical periods. Intended for both English and Drama majors and non-majors.

ENGLISH 30A AMERICAN LITERATURE—BEGINNINGS THROUGH CIVIL WAR
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/discussion
Survey of major authors, themes and genres of American literature from its beginnings through the Civil War. (CAN ENGL 14) (With ENGL 30B, CAN ENGL SEQ C)

ENGLISH 30B AMERICAN LITERATURE—CIVIL WAR TO THE PRESENT
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/discussion
Survey of major authors, themes and genres of American literature from the Civil War to the present. (CAN ENGL 16) (With English 30A, CAN ENGL SEQ C)

ENGLISH 32 INTRODUCTION TO POETRY
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/discussion
Develops a critical appreciation of poetry as genre through study of selected poets and historical periods; examines poetic structures, styles, themes, and contexts. Students read representative works in English as well as selected works in translation.

ENGLISH 33 INTRODUCTION TO SHAKESPEARE (THE DRAMA)
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/discussion
Reading and discussion of selected plays of Shakespeare; includes discussion of the historical context and contemporary critical views.
ENGLISH 34 INTRODUCTION TO THE NOVEL
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/discussion
Reading and discussion of selected novels from the eighteenth century to present. Includes discussion of the historical context and contemporary critical views.

ENGLISH 35 INTRODUCTION TO THE SHORT STORY
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/discussion

ENGLISH 37 AMERICAN FILM MASTERPIECES
Units: 3 Transfer: CSU/UC
Hours: 4 (2 lecture, 2 viewing activity)
Development of a critical appreciation of the motion picture as art and literature. Emphasis on American films.

ENGLISH 38 INTERNATIONAL FILM MASTERPIECES
Units: 3 Transfer: CSU/UC
Hours: 4 (2 lecture, 2 viewing activity)
Development of a critical appreciation of the motion picture as art and literature. Emphasis on International films.

ENGLISH 40 THE FILMED NOVEL
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture/viewing
An introduction to the genres of the novel and the film. Includes historical background and basic terminology for these art forms. Examines the challenges of adapting one art form into another, while studying specific novels and their film adaptations.

ENGLISH 42 THE DOCUMENTARY FILM
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Development of a critical appreciation of modern documentary film across a variety of subject matter: sports, advertising, politics, music, art, biography, foreign affairs, business, science, and history.

ENGLISH 43 INTRODUCTION TO CALIFORNIA LITERATURE
Units: 3 Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W recommended
Hours: 3 lecture
An overview of the themes and types of California literature. Native American oral tradition, the Explorers, the Gold Rush, Realism and Naturalism, the Lost Generation, Detective Fiction, the Agrarian Writers, the Beats, environmental poets, and contemporary writers.

ENGLISH 44 INTRODUCTION TO CHILDREN’S LITERATURE (ALSO HUM.DEV. 44)
(FORMERLY ENGLISH 31)
Units: 3 Transfer: CSU
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Examination of classic and contemporary children’s literature, including criteria for selection, uses in child development and education, and practices in presentation and analysis. Designed for parents, prospective teachers, aides, child development professionals and students interested in the field of literature for children ages 1-13.

ENGLISH 45 INTRODUCTION TO ADOLESCENT LITERATURE (ALSO HUM.DEV. 45)
Units: 3 Transfer: CSU
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
An examination of works which have earned merit as classics written for young adults, including discussion of literary form, the criteria for selection, practice in presentation and analysis, and aesthetic appreciation in young readers. May include representative writers such as Shakespeare, Dickens, Twain, and Tolkien as well as contemporary, multiculturally diverse writers such as Salinger, Angelou, Tan, Walker, and Wright.

ENGLISH 46A ENGLISH LITERATURE
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Survey of English literature from the Anglo-Saxon period through the mid 18th century. Includes study of selected major authors and texts of each period as well as significant or representative minor authors and texts. Incorporates analysis of the change and development of literary forms, development and transformation of central themes, and historical and cultural contexts of the literature. Required for English majors. Students may begin with either 46A or 46B. (CAN ENGL 8)(With English 46B, CAN ENGL SEQ B)

ENGLISH 46B ENGLISH LITERATURE
Units: 3 Transfer: CSU/UC
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
A study of representative fiction, poetry, drama, and non-fiction prose of British authors from the Romantic Movement through the late 20th century. Includes works of principal Romantic, Victorian, and 20th poets, novelists, playwrights, and/or essayists as well as selected works of significant and representative minor authors. Incorporates analysis of historical and cultural contexts of the literature. Required for English majors. (CAN ENGL 10) (With English 46A, CAN ENGL SEQ B)
ENGLISH 47A WORLD LITERATURE  
Units: 3  
Transfer: CSU/UC  
Prerequisite: Eligibility for English 1A or E.S.L. 40W  
Hours: 3 lecture  
A survey of world literature from the ancient world through the European Renaissance. Includes representative works from around the world.

ENGLISH 47B WORLD LITERATURE  
Units: 3  
Transfer: CSU  
Prerequisite: Eligibility for English 1A or E.S.L. 40W  
Hours: 3 lecture  
A survey of world literature from the seventeenth through twenty-first centuries. Includes representative works from around the world.

ENGLISH 48 LITERATURE OF SCIENCE FICTION  
Units: 3  
Transfer: CSU/UC  
Advisory: Eligibility for English 1A or E.S.L. 40W recommended  
Hours: 3 lecture  
The major themes and types of science fiction literature, its primary artists, and its literary and historical relevance.

ENGLISH 50 READING STRATEGIES FOR COLLEGE SUCCESS  
Units: 3-4  
Prerequisite: Completion of English 570 with a “C” or better, or placement by an appropriate score on the assessment test  
Hours: 6 (3 lecture, 3 laboratory), day; 4 (3 lecture, 1 laboratory), evening and summer session  
Emphasis on vocabulary development, reading comprehension and study strategies for college-level textbooks and essays. Critical reading skills include analysis of argumentative essays and determining fact and opinion, bias and tone. Not open to students who have completed English N.

ENGLISH 501 DEVELOPMENTAL WRITING  
Units: 4 (Non-Degree Credit)  
Hours: 5 (3 lecture, 2 activity)  
Focuses on basic writing skills through practice in writing and reading. Includes reading, studying and responding in writing to short, nonfiction selections from a variety of sources at a level appropriate to the course. Emphasizes the writing process leading to development of skills in writing sentences, single paragraphs, and multi-paragraph assignments. Designed for students who need review prior to enrolling in English A.

ENGLISH 510 WRITING FOR PROFICIENCY  
Units: 1 (Non-Degree Credit)  
Hours: As scheduled for a total of 18 lecture hours  
Review and practice in understanding writing assignments; structuring and developing paragraphs and essays; editing and correcting errors in grammar and mechanics. Credit/No Credit Grading.

ENGLISH 560 FOUNDATIONS FOR READING AND SUCCESSFUL LEARNING  
Units: 4 (Non-Degree Credit)  
Hours: 6 (3 lecture, 3 laboratory)  
Designed to assist students in developing foundational strategies for success in college level reading and learning. Increases competency in vocabulary, word usage, spelling, and writing strategies.

ENGLISH 570 READING IMPROVEMENT  
Units: 4 (Non-Degree Credit)  
Hours: 6 (3 lecture, 3 laboratory)  
Designed to improve literal and inferential comprehension skills. Emphasis on vocabulary development, determining main idea and supporting details, patterns of organization, fact and opinion, purpose and tone.

ENGLISH 573 STRATEGIES FOR SUCCESSFUL SPELLING  
Units: 3 (Non-Degree Credit)  
Hours: 5 (2 lecture, 3 laboratory)  
Designed to improve spelling skills. Increases competency in vocabulary and background knowledge, phonics and pronunciation, fundamental sound patterns and syllabication, use of appropriate word structure and spelling generalizations.
English as a Second Language

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY COORDINATOR: Kaye Foster
FACULTY: R. Persiani, S. Trant
LIAISON COUNSELOR: P. Neal

ENGLISH AS A SECOND LANGUAGE COURSES

E.S.L. 30W ADVANCED WRITING & GRAMMAR FOR ESL STUDENTS
Units: 4
Transfer: CSU
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 540W with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Advanced writing for non-native speakers: essay focus, organization, and development, writing from textual sources. Grammar emphasis: word choice, sentence structure, and self-editing strategies. Prepares student for E.S.L. 40W.

E.S.L. 40L COLLEGE COMMUNICATION FOR ESL STUDENTS
Units: 4
Transfer: CSU
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 560L with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
College speaking and listening course for non-native speakers emphasizing formal speaking and informal class participation skills for college settings; lecture comprehension/note taking; accent reduction.

E.S.L. 40W COLLEGE COMPOSITION FOR ESL STUDENTS
Units: 4
Transfer: CSU/UC
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 30W or English A with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
College writing for non-native speakers emphasizing essay development, writing from textual sources, argumentation, and research. Satisfies composition requirements for A.A. degree and CSU General Education requirements, and transfers to UC as elective credit.

E.S.L. 500L NOVICE LISTENING/SPEAKING
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by the E.S.L. matriculation process
Advisory: Concurrent enrollment in E.S.L. 500R and 500W recommended
Hours: 5 (4 lecture, 1 laboratory)
Multi-skill course emphasizing listening and speaking for non-native English speakers. Focusing on oral fluency for common daily and academic situations. Prepares students for E.S.L. 510L. Not open to students completing E.S.L. 520L or higher with a grade C or better.

E.S.L. 500R NOVICE READING/VOCABULARY
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by the E.S.L. matriculation process
Advisory: Concurrent enrollment in E.S.L. 500W and 500L recommended
Hours: 5 (4 lecture, 1 laboratory)
Multi-skill course emphasizing reading and vocabulary for non-native English speakers. Basic skills in reading short texts for comprehension and vocabulary acquisition. Prepares students for E.S.L. 510R. Not open to students who have completed E.S.L. 520R or higher with a grade C or better.

E.S.L. 500W NOVICE WRITING/GRAMMAR
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by the E.S.L. matriculation process
Advisory: Concurrent enrollment in E.S.L. 500R and E.S.L 500L recommended
Hours: 5 (4 lecture, 1 laboratory)
Multi-skill course emphasizing writing and grammar for non-native English speakers. Focusing on basic grammar usage and sentence-level writing. Prepares students for E.S.L. 510W. Not open to students completing E.S.L. 520W or higher with a grade of C or better.

E.S.L. 510L NOVICE—HIGH LISTENING & SPEAKING FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by matriculation assessment process or completion of ESL 500L with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Novice-high multi-skill course for non-native speakers on listening comprehension, pronunciation and conversation. Prepares student for E.S.L. 520L.
E.S.L. 510R NOVICE—HIGH READING AND VOCABULARY FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 500R with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Novice-high multi-skill course for non-native speakers on basic reading comprehension, vocabulary and dictionary skills. Prepares student for E.S.L. 520R.

E.S.L. 510W NOVICE—HIGH WRITING & GRAMMAR FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 500W with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Novice-high multi-skill course for non-native speakers on sentence and paragraph writing with emphasis on sentence structure, subject-verb agreement, noun forms, and verb tense. Prepares student for E.S.L. 520W.

E.S.L. 520L INTERMEDIATE—LOW LISTENING & SPEAKING FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by matriculation assessment process or completion of E.S.L. 510L with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Intermediate-low multi-skill course for non-native speakers on listening and speaking comprehension, pronunciation, and conversation skills. Prepares student for E.S.L. 530L.

E.S.L. 520R INTERMEDIATE—LOW READING AND VOCABULARY FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 510R with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Intermediate-low multi-skill course for non-native speakers on reading and vocabulary with emphasis on reading longer texts more quickly with good understanding. Prepares student for E.S.L. 530R.

E.S.L. 520W INTERMEDIATE—LOW WRITING AND GRAMMAR FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 510W with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Intermediate-low multi-skill course for non-native speakers in paragraph and short, multiple-paragraph writing with emphasis on grammar, sentence structure, simple and complex verb tenses, auxiliary verbs and word forms. Prepares student for E.S.L. 530W.

E.S.L. 530L INTERMEDIATE—MID LISTENING & SPEAKING FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 520L with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Intermediate-mid multi-skill course for non-native speakers on listening comprehension, pronunciation, and conversation skills.

E.S.L. 530R INTERMEDIATE—MID READING AND VOCABULARY FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of ESL 520R with a grade of “C” or better
Hours: 5 (4 lecture, 1 laboratory)
Intermediate-mid multi-skill course for non-native speakers on reading and vocabulary with emphasis on reading speed, longer and more complex texts, vocabulary development, idioms, and comprehension.

E.S.L. 530W INTERMEDIATE—MID WRITING AND GRAMMAR FOR ESL STUDENTS
Units: 4 (Non-Degree Credit)
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 520W with a grade of “C” or better.
Hours: 5 (4 lecture, 1 laboratory)
Intermediate-mid multi-skill course for non-native speakers on basic organization and development in essay writing. Emphasis on grammar of complex sentence structures, verb tenses, and modal auxiliaries.
E.S.L. 540L INTERMEDIATE HIGH LISTENING & SPEAKING FOR ESL STUDENTS  
(FORMERLY E.S.L. 20L)  
Units: 4 (Non-Degree Credit)  
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 530L with a grade of “C” or better  
Hours: 5 (4 lecture, 1 laboratory)  
Intermediate-high speaking and listening course for non-native speakers on general listening comprehension, academic listening skills, academic speaking tasks, and pronunciation. Prepares student for E.S.L. 560L.

E.S.L. 540R INTERMEDIATE HIGH ESL READING  
(FORMERLY E.S.L. 20R)  
Units: 4 (Non-Degree Credit)  
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 530R with a grade of “C” or better  
Hours: 5 (4 lecture, 1 laboratory)  
Intermediate-high reading course for non-native speakers on reading longer academic texts with better understanding, improving reading speed and extensive out-of-class reading. Prepares student for E.S.L. 560R.

E.S.L. 540W INTERMEDIATE HIGH WRITING & GRAMMAR FOR ESL STUDENTS  
(FORMERLY E.S.L. 20W)  
Units: 4 (Non-Degree Credit)  
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 530W with a grade of “C” or better  
Hours: 5 (4 lecture, 1 laboratory)  
Intermediate-high writing course for non-native speakers on academic essay organization, development, and support. Review of sentence structure and variety, simple and complex verb tenses, tense selection, noun endings, articles, and subject-verb agreement. Prepares student for E.S.L. 30W.

E.S.L. 550 ESL ADVANCED EDITING FOR PROFICIENCY  
Units: 2 (Non-Degree Credit)  
Prerequisite: Placement by ESL matriculation assessment process at ESL 30W or higher or completion of ESL 20W with a grade of “C” or better  
Hours: 2 lecture  
Review and practice for advanced non-native speakers in understanding timed writing assignments and editing and correcting errors in sentence structure, grammar, mechanics and word choice in timed writing settings. Open to students currently enrolled in ESL 30W or with incompletes in that course. (Credit/No Credit Grading)

E.S.L. 560L ADVANCED LISTENING & SPEAKING FOR ESL STUDENTS  
(FORMERLY E.S.L. 30L)  
Units: 4 (Non-Degree Credit)  
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 540L with a grade of “C” or better  
Hours: 5 (4 lecture, 1 laboratory)  
Advanced speaking and listening course for non-native speakers on listening comprehension for academic settings, lecture note-taking, class participation skills, formal speaking tasks, accent reduction.

E.S.L. 560R ADVANCED READING FOR ESL STUDENTS  
(FORMERLY E.S.L. 30R)  
Units: 4 (Non-Degree Credit)  
Prerequisite: Placement by ESL matriculation assessment process or completion of E.S.L. 540R with a grade of “C” or better  
Hours: 5 (4 lecture, 1 laboratory)  
Advanced reading course for non-native speakers on reading literary, journalistic, and academic texts, displaying a clear understanding of the material and accelerating reading speed. Extensive reading of literary and academic material.

E.S.L. 805 ENGLISH FOR WORK SUCCESS I  
Units: 0 (No Credit)  
Hours: As scheduled for 48 - 96 laboratory hours  
Novice-level vocational English as a Second Language focusing on work place language needs and skills. Emphasis on listening and speaking in workplace situations and related grammar, structure, vocabulary, reading and writing skills. May be repeated.

Environmental Horticulture  
(ALSO SEE AGRICULTURE)

SCIENTES & MATHEMATICS  
DEAN: Karen Walters Dunlap  
ASSOCIATE DEAN: Vacant  
DIVISION OFFICE: Ht 4  
FACULTY: M. Braga  
liaison counselors: M. Moon, B. Ruud

Environmental Horticulture is an important branch of plant science. Broadly defined, it is the business, science and art of cultivating, processing, and marketing of ornamental plants, fruits and vegetables. As a business and art, it beautifies the environment, provides employment for people with a wide variety of skills and talents, and is supported by many service industries. The discipline can provide a foundation for individuals interested in pursuing higher levels of scientific research or study into specific aspects of horticulture or other related fields.
TRANSFER AND MAJOR REQUIREMENTS in Environmental Horticulture are available in the Counseling Center. Students should consult a counselor for other transfer requirements. Catalogs of California and out-of-state colleges are available in the Library and the Counseling Center.

ENVIRONMENTAL HORTICULTURE—A.S. DEGREE OR CERTIFICATE

The Environmental Horticulture program trains students for entry level positions, enhances existing skills, and prepares students for transfer. Graduates of the program are prepared for careers in plant propagation & production, wholesale & retail nursery operations, interior landscaping, plant pest management, arboriculture and urban forestry, landscape design, construction, installation & maintenance, sports turf maintenance and other related fields. Requirements are the same for both degree and certificate programs, both require a total of 29 units in the major. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED CORE COURSES (22 UNITS)  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>Ag. 221</td>
<td>Introduction to Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 2</td>
<td>Horticultural Plant Science</td>
<td>4</td>
</tr>
<tr>
<td>Env.Hort 34</td>
<td>Plant Propagation OR</td>
<td></td>
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<td>Env.Hort 46</td>
<td>Nursery Practices</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 35A</td>
<td>Plant Identification</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 35B</td>
<td>Plant Identification</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 36</td>
<td>Landscape Design</td>
<td>3</td>
</tr>
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<td>Env.Hort 52</td>
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PLUS 3 UNITS FROM:

<table>
<thead>
<tr>
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<tr>
<td>Ag. 216</td>
<td>Agricultural Accounting</td>
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<td>Introduction to Business</td>
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PLUS 4 ADDITIONAL UNITS FROM:

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<tbody>
<tr>
<td>Ag. 41</td>
<td>Landscape &amp; Garden Machine Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>Env.Hort 28</td>
<td>Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>Env.Hort 30</td>
<td>Tropical Plant Identification &amp; Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 37</td>
<td>Advanced Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 38</td>
<td>Landscape Construction</td>
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</tr>
<tr>
<td>Env.Hort 39</td>
<td>Landscape Irrigation</td>
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<tr>
<td>Env.Hort 40</td>
<td>Arboriculture</td>
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<tr>
<td>Env.Hort 46</td>
<td>Nursery Practices</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 47</td>
<td>Landscape Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 51</td>
<td>Turfgrass Management</td>
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<tr>
<td>Env.Hort 53</td>
<td>Xeriscapes</td>
<td>2</td>
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<td>Env.Hort 95</td>
<td>Internship</td>
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<tr>
<td>Env.Hort 116</td>
<td>Professional Interior Landscaping</td>
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<tr>
<td>Env.Hort 118</td>
<td>Seeds</td>
<td>1</td>
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<tr>
<td>Env.Hort 120</td>
<td>Introduction to Small Scale Horticulture Production</td>
<td>1</td>
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<tr>
<td>Env.Hort 134A</td>
<td>Fall Propagation Lab</td>
<td>1</td>
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<tr>
<td>Env.Hort 134B</td>
<td>Spring Propagation Lab</td>
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<tr>
<td>Env.Hort 136</td>
<td>Computer-Aided Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 180</td>
<td>Gardening with CoLR5</td>
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</table>

Env.Hort 181 Wildflower Identification ........................................... 5
Env.Hort 182 Budding and Grafting ........................................................ 5
Env.Hort 183 Vegetable Gardening ......................................................... 5
Env.Hort 184 Pruning Ornamentals ........................................................... 5
Env.Hort 185 Outdoor Container Gardening .............................................. 5
Env.Hort 186 Pruning and Training Fruit and Nut Trees .............................. 5

TOTAL UNITS REQUIRED: 29

ENVIRONMENTAL HORTICULTURE—A.A. OR A.S. DEGREE OR CERTIFICATE

INTERIOR PLANTSCAPING

The Interior Plantscaping A.A./A.S. Degree and Certificate Program is offered for students wishing to achieve the competencies of managing, designing, installing, and maintaining interior landscape settings. Course work is directed toward skills, concepts and practices used in the interior plantscaping industry with a hands-on training emphasis. Courses are designed for students interested in careers in tropical plant production, plant sales and brokerage, greenhouse management, interior landscape design, installation and management. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED CORE COURSES  

<table>
<thead>
<tr>
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<tr>
<td>Env.Hort 36</td>
<td>Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 52</td>
<td>Pest Management</td>
<td>3</td>
</tr>
<tr>
<td>Env.Hort 95</td>
<td>Internship in Environmental Horticulture</td>
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<tr>
<td>Env.Hort 116</td>
<td>Professional Interior Landscaping</td>
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</tr>
<tr>
<td>Env.Hort 184</td>
<td>Pruning Ornamentals</td>
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<tr>
<td>Env.Hort 185</td>
<td>Outdoor Container Gardening</td>
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PLUS 3 UNITS FROM THE FOLLOWING:

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<th>Course Code</th>
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<td>Art 6C</td>
<td>Color Theory</td>
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<tr>
<td>Env.Hort 28</td>
<td>Independent Study</td>
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</tr>
<tr>
<td>Env.Hort 34</td>
<td>Plant Propagation OR</td>
<td></td>
</tr>
<tr>
<td>Env.Hort 46</td>
<td>Nursery Practices</td>
<td>1</td>
</tr>
<tr>
<td>Env.Hort 134A</td>
<td>Fall Propagation Lab</td>
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<tr>
<td>Env.Hort 180</td>
<td>Gardening with CoLR5</td>
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</tr>
<tr>
<td>Env.Hort 182</td>
<td>Budding and Grafting</td>
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PLUS 3 UNITS FROM THE FOLLOWING:

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<tr>
<th>Course Code</th>
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<tr>
<td>Business 140</td>
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<tr>
<td>C.I.S. 30</td>
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<td>3</td>
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<tr>
<td>P.D. 1</td>
<td>College Success</td>
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</tbody>
</table>

TOTAL UNITS REQUIRED: 22
ENVIRONMENTAL HORTICULTURE COURSES

ENV.HORT 2 HORTICULTURAL PLANT SCIENCE
Units: 4  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 6 (3 lecture, 3 laboratory)
Introduction to biological principles of Horticultural practices emphasizing structure, growth, physiology and reproduction of flowering plants and their responses to modifications and environment; including propagation, media, soil and plant nutrition. Explores the interrelationship of horticulture with other life sciences and technology. Identifies the value of plants and gardens in past and present societies.

ENV.HORT 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

ENV.HORT 30 TROPICAL PLANT IDENTIFICATION AND MAINTENANCE
Units: 3
Advisory: Completion of or concurrent enrollment in Env.Hort 33
Hours: 5 (2 lecture, 3 laboratory)
Examines indoor plant maintenance business as well as interior plant care. Includes plant identification and selection, location and design practices, care and maintenance, purchasing and sales aspects, field trips, plant care in greenhouse facility and demonstrations by industry personnel.

ENV.HORT 34 PLANT PROPAGATION
Units: 3  Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Commercial nursery operation, production. Nursery layout, sexual propagation, transplanting, potting, canning, fertilizing, irrigating, propagating (vegetative), and pest control. Environmental control of ornamental plants from seed or cutting to sales outlet. (CAN AG 10)

ENV.HORT 35A PLANT IDENTIFICATION
Units: 3  Transfer: CSU/UC*
Advisory: Students may begin with either Env.Hort 35A or 35B
Hours: 5 (2 lecture, 3 laboratory)
Study of identifiable growth characteristics and cultural requirements for healthy plant growth. Material selection based on architectural styles and compatible plants from ground covers to canopy trees. Ability to hike moderate distances may be required.

ENV.HORT 35B PLANT IDENTIFICATION
Units: 3  Transfer: CSU/UC*
Advisory: Students may begin with either Env.Hort 35A or 35B
Hours: 5 (2 lecture, 3 laboratory)
Continuation of Env.Hort 35A. Studies identifiable growth characteristics and cultural requirements for healthy plant growth. Material selection based on architectural styles and compatible plants from ground covers to canopy trees. Ability to hike moderate distances may be required.

ENV.HORT 36 LANDSCAPE DESIGN
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of or concurrent enrollment in Env.Hort 35A or Env.Hort 35B
Hours: 5 (2 lecture, 3 laboratory)
Basic principles of landscape design. Includes construction considerations, planting design, soils and drainage, estimation, and site development. May be taken twice for credit.

ENV.HORT 37 ADVANCED LANDSCAPE DESIGN
Units: 3
Prerequisite: Completion of Env.Hort 36
Hours: 5 (2 lecture, 3 laboratory)
Application of advanced principles and elements of landscape design through the problem solving process. Functional use of landscape materials and implementation of design principles. Methods of presenting projects for client approval.

ENV.HORT 38 LANDSCAPE CONSTRUCTION
Units: 3  Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Construction course with procedural techniques in landscape structures such as patios, decks, fences, walls. May be taken three times for credit.

ENV.HORT 39 LANDSCAPE IRRIGATION
Units: 2.5  Transfer: CSU
Hours: 3.5 (2 lecture, 1.5 laboratory)
Sprinkler irrigation design, installation, maintenance, and repair. Instruction will include both classroom lecture as well as “hands-on” field installation practices. May be taken twice for credit.

ENV.HORT 40 ARBORICULTURE
Units: 3  Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Study and application of the principles and practices of tree care and selection. Provides classroom and field experience in equipment usage and safety, tree pruning on a large and small scale, preventative maintenance practice, tree selection and disease, as well as insect recognition and control practices.
ENV.HORT 46 NURSERY PRACTICES
Units: 3
Prerequisite: Completion of Env.Hort 33
Hours: 3 lecture
Study of retail and wholesale nursery operations. Topics included are public relations, advertising, crop management, merchandising, and customer services.

ENV.HORT 47 LANDSCAPE MAINTENANCE
Units: 3 Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Maintenance of residential and commercial landscapes, parks, highways, and public buildings. Skill development in pruning, watering, fertilizing, pesticide application, and power equipment operation.

ENV.HORT 51 TURFGRASS MANAGEMENT
Units: 3 Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Management and maintenance practices for turfgrass, including turf species, growth characteristics, irrigation, fertilization, pest control and equipment. Emphasis on golf course technique, also includes parks, athletic fields and landscapes.

ENV.HORT 52 PEST MANAGEMENT
Units: 3
Hours: 3 lecture
Introduction to pest management covering basic concepts, such as identification of pests, symptoms, diagnosis and control methods on turfgrassed ornamentals. Emphasis on integrated pest management principles. Includes weeds, vertebrates, invertebrates and plant pathogens.

ENV.HORT 53 XERISCAPE PLANTING
Units: 2
Hours: 2 lecture
Study of water management as it applies to the landscape. Topics include plant selection, landscape design principles for water conservation, irrigation system selection and management, and soil preparation and management. Ability to hike moderate distances may be required.

ENV.HORT 95 INTERNSHIP IN ENVIRONMENTAL HORTICULTURE
Units: .5-4 Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

ENV.HORT 116 PROFESSIONAL INTERIOR LANDSCAPING
Units: 1
Hours: As scheduled for a total of 18 lecture hours
Professional operations, skills and processes appropriate to the interiorscape industry in California. Emphasis placed upon merchandising, salesmanship, communication, tools and technology of the professional interiorscaper.

ENV.HORT 117 INTERIOR PLANTS
Units: 1
Hours: As scheduled for a total of 18 lecture hours
Examines indoor plant maintenance business as well as interior plant care. Topics include plant identification and selection, location and design practices, care and maintenance, and purchasing and sales aspects of the “interior-scape” business.

ENV.HORT 118 SEEDS
Units: 1
Advisory: Completion of Env.Hort. 33 recommended
Hours: As scheduled for a total of 18 lecture hours
Examines seeds as a type of plant propagation. Topics include biology of the seed, seed dormancy, harvesting, cleaning methods, treatments, storage and germination and survey of career opportunities.

ENV.HORT 120 INTRODUCTION TO SMALL SCALE HORTICULTURE PRODUCTION
Units: 1
Hours: 1 lecture
An introduction to small scale direct market, horticultural production. Topics include: land and resource assessment, cultural requirements of various crops, market analysis and regulatory aspects of production.

ENV.HORT 134A FALL PROPAGATION LAB
Units: 1
Advisory: Completion or concurrent enrollment in Env.Hort 33
Hours: 3 laboratory
Provides an advanced level of skill, technique and experience in plant production. Continued in-depth studies of propagation materials, sexual and asexual reproduction, transplanting and planting. Preparation and use of propagation and planting media. Student’s involvement in organized plant sales is required. Students may take Env.Hort 134A and 134B combined a maximum of four times for credit.
ENV.HORT 134B SPRING PROPAGATION LAB  
Units: 1  
Advisory: Completion or concurrent enrollment in Env.Hort 33  
Hours: 3 laboratory  
Provides an advanced level of skill, technique and experience in plant production. Continued in-depth studies of propagation materials, sexual and asexual reproduction, transplanting and planting. Preparation and use of propagation and planting media. Student’s involvement in organized plant sales is required. Students may take Env.Hort 134A and 134B combined a maximum of four times for credit.

ENV.HORT 136 COMPUTER-AIDED LANDSCAPE DESIGN  
Units: 3  
Prerequisite: Completion of Env.Hort 36 or equivalent  
Transfer: CSU/UC  
Hours: 5 (2 lecture, 3 laboratory)  
This is an introductory course using AutoCAD software to develop landscape designs. Topics will include basic computer familiarization and the basic elements of computer-aided drafting concepts related to landscape drafting and design. The student will gain experience implementing landscape designs in the CAD environment.

ENV.HORT 180 GARDENING WITH COLOR  
Units: .5  
Hours: As scheduled for a total of 9 lecture hours  
Provides methods to plan and install perennial gardens for continuous bloom throughout the seasons. Includes layout, plant selection, installation, and maintenance.

ENV.HORT 181 WILDFLOWER IDENTIFICATION (ALSO BIO.SCI. 23)  
Units: .5  
Hours: As scheduled for a total of 17 hours (5 lecture, 12 laboratory)  
Field trip to the local foothills for plant identification, keying, uses, and ecology. Ability to hike moderate distances may be required.

ENV.HORT 182 BUDDING AND GRAFTING  
Units: .5  
Hours: As scheduled for a total of 9 lecture hours  
Examines budding and grafting as a type of vegetative propagation. Includes reasons for budding and grafting, various methods, terms, collection and treatment of stock and scion wood, post graft care and use of appropriate tools and media. May be taken four times for credit.

ENV.HORT 183 VEGETABLE GARDENING  
Units: .5  
Hours: As scheduled for a total of 9 lecture hours  
Small scale vegetable crop production including field lay-out, vegetable crop selection and harvesting. Techniques of seed propagation and field cultivation are presented. Application of principles of successive planting and harvesting.

ENV.HORT 184 PRUNING ORNAMENTALS  
Units: .5  
Hours: As scheduled for a total of 9 lecture hours  
Principles of pruning including practical hands-on skill development pruning shrubs, vines, and trees. Brief overview of plant physiology in relationship to pruning. Application of pruning techniques to a variety of plant material.

ENV.HORT 185 OUTDOOR CONTAINER GARDENING  
Units: .5  
Hours: As scheduled for a total of 9 lecture hours  
Basic principles of growing plants in containers as an alternative or addition to conventional gardening. Includes reasons for container gardening, types of containers, container media, plant nutrition, plant selection and design, irrigation methods and potential problems and solutions. May be taken four times for credit.

ENV.HORT 186 PRUNING AND TRAINING FRUIT AND NUT TREES  
Units: .5  
Transfer: CSU  
Hours: As scheduled for a total of 9 lecture hours  
Examines pruning and training of fruit and nut trees for increased production and ease of management. Explores reasons for training and pruning, various methods, terms, pruning of dormant trees, effects of pruning cuts and hands-on application of pruning principles and use of appropriate tools.
Family and Consumer Sciences

SCIENCEs & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: C. Dendiger
LIAISON COUNSELORS: E. Dickson, T. Maddux, C. Morris

Family and Consumer Sciences is basically a resource management program that encompasses human and material resources. The department offers opportunities for the study of life management; nutrition and food; textiles and apparel; home management and housing; consumer decisions; parent education; human development and family studies. Within this department are certificate programs as well as basic preparation for potential careers in the program areas listed above.

See also the following sections in this catalog for specific major programs: Fashion Design and Merchandising; Human Development and Family (Early Childhood Development); Nutrition and Food Science.

TRANSFER MAJOR REQUIREMENTS in Family and Consumer Sciences and Home Economics are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Home Economics are qualified include business, education, parent educator and consumer advisor.

FAMILY AND CONSUMER SCIENCES COURSES

FACS 2 LIFE MANAGEMENT
Units: 3 Transfer: CSU
Hours: 3 lecture
Provides skills for identifying, developing and using personal and environmental resources to function effectively in a changing society. Major topics include the following: effects of cultural forces and societal trends on values, standards, and goals; skills for decision-making; time, energy, stress, and conflict management; and techniques for improving self-understanding and interpersonal relationships.

FACS 28 INDEPENDENT STUDY
(Inactive 4-10-01)

FACS 300 SELECTED TOPICS IN FAMILY AND CONSUMER SCIENCES
Units: 3-4 Transfer: CSU
Course of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

FACS 400 SELECTED TOPICS IN FAMILY AND CONSUMER SCIENCES
Units: 3-4
Course of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Fashion Design and Merchandising
(FORMERLY APPAREL DESIGN & PRODUCTION AND FASHION MERCHANDISING)

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
LIAISON COUNSELORS: K. Parker, V. Rogers

The Fashion Design and Merchandising program is designed to provide students with the necessary background for careers in the fashion industry or as a basis for advanced study. A.A. and A.S. degrees as well as certificates can be earned in the Fashion Design and Merchandising field. The certificate programs do not satisfy A.A./A.S. degree requirements but do qualify students for certificates in the field of study.

APPLRE DESIGN & PRODUCTION—A.A. OR A.S. DEGREE
Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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<tr>
<td>Fash.Des 1 Introduction to Fashion</td>
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<td>Fash.Des 2 Fashion Analysis &amp; Selection</td>
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<td>Fash.Des 3 Textiles</td>
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<td>Fash.Des 4A Basic Clothing Construction</td>
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<td>Fash.Des 5 Patternmaking &amp; Design</td>
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<tr>
<td>Fash.Des 6 Tailoring</td>
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</tr>
</tbody>
</table>
Fash.Des 8 Fashion Illustration ................................. 3
Fash.Des 10 Draping ............................................. 3
Fash.Des 12 Fashion History ................................. 3
Fash.Des 28 Independent Study OR
Fash.Des 95 Internship in Fashion Merchandising .......... 3
Art/Des. 20 Portfolio Development .......................... 2
TOTAL UNITS REQUIRED: 31-35
Recommended Electives: Art 1A, 1B, 5A, 5B, 6A, Drama 16A, Business 20, 120, 140

APPAREL DESIGN & PRODUCTION—CERTIFICATE
The certificate in Apparel Design and Production will qualify students for positions as assistant designers, showroom representatives, piece goods buyers, sample makers, custom designers/seamstresses and alteration specialists. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. Degree.

REQUIRED COURSES
Fash.Des 1 Introduction to Fashion .......................... 3
Fash.Des 2 Fashion Analysis & Selection .................... 3
Fash.Des 3 Textiles ............................................. 3
Fash.Des 4A Basic Clothing Construction .................. 2-3
Fash.Des 5 Patternmaking & Design ......................... 2-3
Fash.Des 6 Tailoring ............................................ 2-3
Fash.Des 8 Fashion Illustration ............................. 3
Fash.Des 10 Draping ............................................ 3
Fash.Des 12 Fashion History ................................ 3

PLUS 3 ADDITIONAL UNITS FROM:
Art 1A History of Prehistoric through Gothic Art ........... 3
Art 1B History of Renaissance to Mid-Nineteenth Century Art . 3
Art 6A Design .................................................. 3
Drama 16A Costume History ................................ 3
TOTAL UNITS REQUIRED: 27-30

FASHION MERCHANDISING—A.A. OR A.S. DEGREE
Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES
Fash.Des 1 Introduction to Fashion .......................... 3
Fash.Des 2 Fashion Analysis & Selection .................... 3
Fash.Des 3 Textiles ............................................. 3
Fash.Des 7 Fashion Promotion .............................. 3
Fash.Des 12 Fashion History ................................ 3
Fash.Des 28 Independent Study OR
Fash.Des 95 Internship in Fashion Merchandising .......... 3
Business 120 Introduction to Marketing .................... 3
Business A Elements of Accounting OR
Business 64 Business Mathematics ........................ 3
Business 123 Retailing ....................................... 3
TOTAL UNITS REQUIRED: 30
Recommended Electives: Fash.Des. 4A, C.S. 10, Photo. 60A, Comm. St.1, Art/Des. 20

FASHION MERCHANDISING—CERTIFICATE
A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES
Business A Elements of Accounting OR
Business 64 Business Mathematics ........................ 3
Fash.Des 1 Introduction to Fashion .......................... 3
Fash.Des 2 Fashion Analysis & Selection .................... 3
Fash.Des 3 Textiles ............................................. 3
Fash.Des 7 Fashion Promotion .............................. 3
Fash.Des 12 Fashion History ................................ 3
Fash.Des 28 Independent Study OR
Fash.Des 95 Internship in Fashion Merchandising .......... 3
Business 120 Introduction to Marketing .................... 3
Business 123 Retailing ....................................... 3
PLUS 3 ADDITIONAL UNITS FROM:
Business 121 Advertising ..................................... 3
Comm.St. 1 Fundamentals of Speech ........................ 3
C.S. 10 Introduction to Computing .......................... 3
(or other computer course) .................................... 3
Fash.Des 4A Basic Clothing Construction .................. 3
Photo. 60A Elementary Photography ........................ 2
TOTAL UNITS REQUIRED: 30

FASHION DESIGN & MERCHANDISING COURSES
FASH.DES 1 INTRODUCTION TO FASHION
(FORMERLY FASH.MR./APP.DES. 1)
Units: 3 Transfer: CSU
Hours: 3 lecture
Exploration of the diversity and complexities of the fashion business. Career opportunities and qualifications will be studied. The relationship between the fashion world and the public, including sources of fashion, influences on fashion, and fashion prediction and promotion, will be addressed. Required for Fashion Design & Merchandising majors.
FASH.DES 2 FASHION ANALYSIS AND SELECTION  
(FORMERLY FASH.MR./APP.DES. 2)  
Units: 3  
Transfer: CSU  
Hours: 3 lecture  
Consideration of the psychological, sociological, and physical factors which have an impact on dress. Principles of design as they relate to clothing and appearance. Consumer issues related to the selection and use of clothing. Required for Fashion Design and Merchandising majors.

FASH.DES 3 TEXTILES (FORMERLY FASH.MR./APP.DES. 3)  
Units: 3  
Transfer: CSU/UC  
Hours: 3 lecture  
Introduction to the study of characteristics and uses of the natural and synthetic fibers and fabrics. Emphasizes evaluation and selection of textile products. Recommended for majors in Family Consumer Sciences, Fashion Design and Merchandising, Marketing, and Interior Design.

FASH.DES 4A BASIC CLOTHING CONSTRUCTION  
(FORMERLY APP.DES. 4A)  
Units: 2-3  
Transfer: CSU  
Hours: 3 (1.5 lecture, 1.5 laboratory)-2 units; 6 (1.5 lecture, 4.5 laboratory)-3 units  
Techniques of garment construction; use of commercial patterns, pattern alterations, and fitting techniques; comparison of construction techniques and costs between ready-to-wear and custom-made clothing; the social and psychological aspects of clothing selection, with emphasis on basic design principles. May be taken twice for credit.

FASH.DES 4B INTERMEDIATE CLOTHING CONSTRUCTION  
(FORMERLY APP.DES. 4B)  
Units: 2-3  
Transfer: CSU  
Prerequisite: Completion of Fash.Des. 4A or equivalent  
Hours: 3 (1.5 lecture, 1.5 laboratory)-2 units; 6 (1.5 lecture, 4.5 laboratory)-3 units  
Intermediate and advanced techniques of garment construction. Designed for individuals with basic knowledge of sewing principles. Development and improvement of skills in working with designer patterns; techniques of handling specialty fabrics, including knit fabrics; use of sergers. May be taken twice for credit.

FASH.DES 5 PATTERNMAKING AND DESIGN  
(FORMERLY APP.DES. 5)  
Units: 2-3  
Transfer: CSU  
Prerequisite: Completion of Fash.Des 4B or equivalent  
Hours: 3 (1.5 lecture, 1.5 laboratory)-2 units; 6 (1.5 lecture, 4.5 laboratory)-3 units  
Fashion design using the flat pattern method. Students will develop a personal master pattern, create original pattern designs, and construct these garments. Designed for individuals with good knowledge of sewing principles. Commercial sewing methods will be presented and compared with home sewing techniques; commercial machines used. May be taken twice for credit.

FASH.DES 6 TAILORING (FORMERLY APP.DES. 6)  
Units: 2-3  
Transfer: CSU  
Prerequisite: Completion of Fash.Des 4B  
Hours: 3 (1.5 lecture, 1.5 laboratory)-2 units; 6 (1.5 lecture, 4.5 laboratory)-3 units  
Instruction in the selection of appropriate patterns, fashion fabrics, interfacings, linings, and notions suitable for custom tailoring techniques; comparative study of tailoring construction in custom and ready-to-wear garments; emphasis on accurate fitting techniques and pattern alterations; special handling and pressing techniques for wool and wool blends. May be taken twice for credit.

FASH.DES 7 FASHION PROMOTION  
(FORMERLY FASH.MR. 5)  
Units: 3  
Transfer: CSU  
Hours: 4 (2 lecture, 2 laboratory)  
Emphasis on the role of promotion in the selling and merchandising of fashion goods. All avenues of fashion promotion will be explored and evaluated including: advertising, publicity, special events, fashion show production, visual merchandising, and merchandising presentation. Planning and technical skills will be developed through activities and projects. Field experience will be included.

FASH.DES 8 FASHION ILLUSTRATION  
Units: 3  
Transfer: CSU  
Hours: 6 (2 lecture, 4 laboratory)  
Illustration techniques with emphasis on figure proportions used in the fashion industry. Various media used to communicate fashion and apparel details. SNAP Fashion presented with focus on flat sketch. May be taken twice for credit.

FASH.DES 10 DRAPING  
Units: 3  
Prerequisite: Completion of Fash.Des 4A  
Hours: 4 (2 lecture, 2 activity)  
Basic draping principles to transform design sketches into 3-dimensional forms. Classic silhouettes and details draped in muslin on dress form to create basic patterns as well as original designs. Will work on bodices, skirts, dresses and collars before creating final muslin project of students’ own design.
FASH.DES 12 FASHION HISTORY
Units: 3
Transfer: CSU
Hours: 3 lecture
Fashion and adornment through the ages to the present. Emphasis on the historical flow and how fashion themes are reinterpreted or influence designs in later periods including the present. Designed for fashion majors as a basis for understanding and appreciating fashion as well as how the times and environment affect styling, colors, fabric and details.

FASH.DES 28 INDEPENDENT STUDY
(FORMERLY FASH.MR./APP.DES 28)
Units: 1-3
Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

FASH.DES 95 INTERNSHIP IN FASHION MERCHANDISING
(FORMERLY FASH.MR./APP.DES 95)
Units: .5-4
Transfer: CSU*
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall or spring semester internships, or at least one other course for summer internships.
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

Fire Technology

SIERRA COLLEGE—NEVADA COUNTY CAMPUS
DEAN: Neal Allbee
AREA OFFICE: Room 205, Roseville Gateway Center, Phone (916) 781-6250
LIAISON COUNSELORS: S. Muraki, D. Quadros, B. Ruud

The Fire Technology program prepares students for a career in the fire service and provides educational and training opportunities for employed and volunteer firefighters.

The Associate Degree and Certificate programs incorporate the standardized Fire Technology curriculum identified by the offices of the California State Chancellor and State Fire Marshal. Elective courses are those developed under the guidelines of related fire service training and educational programs such as CFSTES (California Fire Service Training and Education System), DOT (Department of Transportation), FEMA (Federal Emergency Management Agency), F.S.T.E.P. (Fire Service Training and Education Program) and NFA (National Fire Academy).

Most Fire Technology courses, up to 30 units, may be transferred to CSU.

FIREFIGHTER I ACADEMY
The Firefighter I Academy is offered through partnerships with the Placer and Nevada County Fire Chief’s Associations and The City of Roseville Fire Department. Sierra College is recognized by the California State Fire Marshal and the State Board of Fire Services as an Accredited Regional Fire Academy.

Students must enroll in FT 100, Firefighter I Academy (476 hours) and PE 200 Fire Academy Physical Training (80 hours). Prerequisites to the Academy require completion of Fire Technology 1, Fire Protection Organization and Health Science 2, Emergency Medical Technician.

The Firefighter I Academy is offered in an extended format (evenings and weekend classes), which enables students to maintain employment while preparing for a career in the fire service. The fall Academy is held August through December, and in the spring, January through late May or early June. Classes are held Tuesday and Thursday nights and on Saturdays. Classes may also be scheduled on some Friday nights and Sundays. The Physical Training classes meet on Monday and Wednesday nights.

Individuals completing the Academy may apply to the State of California for a Firefighter I Certificate after successfully completing either one year as a volunteer firefighter or six months as a paid firefighter with a California fire department.

Other Certificates of Training awarded upon completion of the Academy include: (subject to change)
Basic Incident Command System—ICS 200
Confined Space Awareness
Hazardous Materials First Responder—Operational (CSTI)
First Responder Operational—Decontamination (CSTI)
Fire Technology

Fire Control 3
Fire Control 4A / 4B
Low Angle Rescue
Rapid Intervention Crew Tactics
Vehicle Extrication
California Department of Forestry—Basic Firefighter
S-130 Basic Wildland Firefighter
S-190 Beginning Fire Behavior
Swift Water Rescue Awareness

Fire Tec 223 Fire Command 2D—Planning for Large-Scale Disasters

2

Fire Tec 224 Fire Command 2E—Wildland Fire Tactics . . . . . . . . . .

2

FIRE TECHNOLOGY—
A.A. or A.S. DEGREE or CERTIFICATE

Acceptance into the Fire Academy is by an application process, which includes a physical examination. Applications for
the Academy are available in April for the fall academy and
October for the spring academy.

Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A
certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree. Grades of “C” or better must be
earned in all courses required for degree or certificate.

REQUIRED COURSES

units 

Fire Tec 1 Fire Protection Organization . . . . . . . . . . . . . . . . . . . . . .

3

Fire Tec 3 Fire Behavior & Combustion . . . . . . . . . . . . . . . . . . . . . .

3

Fire Tec 4 Fire Protection Equipment & Systems  . . . . . . . . . . . . . .

3

FIRE OFFICER COURSES

Fire Tec 5 Fire Prevention Technology . . . . . . . . . . . . . . . . . . . . . . .

3

The following Fire Technology courses are part of the State Fire
Marshal’s certification track for FIRE OFFICER. These courses are
designed for individuals currently employed as professional or
volunteer firefighters. Individuals without this experience will
be unable to contribute to the educational process and utilize
the information in a timely manner.

Fire Tec 8 Building Construction for Fire Protection . . . . . . . . . . . .

3

COURSES
Fire Tec 150 Command 1A-Principles for Company Officers  . . . .

2

Fire Tec 151 Command 1B-Incident Management for
Company Officers . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2
2

3

Fire Tec 41 Hazardous Materials—Operational Level . . . . . . . . . . . .5-1
Fire Tec 50 Basic Firefighter Training . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 73 Fire Hydraulics  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

3

Fire Tec 74 Fire Apparatus & Equipment . . . . . . . . . . . . . . . . . . . . .

3

Fire Tec 75 Wildland Fire Control . . . . . . . . . . . . . . . . . . . . . . . . . . .

3

Fire Tec 77 Public Education I  . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 100 Fire Fighter I Academy . . . . . . . . . . . . . . . . . . . . . . . . . 17.5
Fire Tec 150 Command 1A-Principles for Company Officers  . . . .

Fire Tec 154 Fire Investigation 1A—Fire Cause, Origin and
Determination . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

3

Fire Tec 10 Fire Fighter Occupational Safety & Survival . . . . . . . . .

Fire Tec 95 Internship in Fire Technology . . . . . . . . . . . . . . . . . . . . .5-4

Fire Tec 152 Fire Command 1C—I-Zone Fire Fighting for
Company Officers . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

PLUS 15 ADDITIONAL UNITS FROM:
Fire Tec 7 Fundamentals of Fire Service Operations  . . . . . . . . . . .

2

Fire Tec 151 Command 1B-Incident Management for

Officers . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 152 Fire Command 1C—I-Zone Fire Fighting for

Fire Tec 159 Fire Prevention 1A-Fire Inspection Practices . . . . . . .

2

Fire Tec 157 Management and Supervision for Company

Company Officers . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Fire Tec 160 Fire Prevention 1B-Fire Protection Systems

Company Officers . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2
2
2

Fire Tec 154 Fire Investigation 1A—Fire Cause, Origin and

& Special Hazards . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Determination . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Fire Tec 163 Fire Instructor 1A . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 155 Fire Investigation 1B—Techniques of Fire Investigation

2
2

Fire Tec 164 Fire Instructor 1B . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 157 Management and Supervision for Company Officers . .

2

Fire Tec 242 Incident Command System I-300  . . . . . . . . . . . . . . .

1

Fire Tec 159 Fire Prevention 1A-Fire Inspection Practices . . . . . . .

2

Fire Tec 160 Fire Prevention 1B-Fire Protection Systems & Special

CHIEF OFFICER COURSES

Hazards  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 163 Fire Instructor 1A . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

The following Fire Technology courses are part of the State Fire
Marshal’s certification track for CHIEF OFFICER and are currently
part of Sierra College’s curriculum (Command 2C pending approval). These courses are intended for individuals currently
employed as professional or volunteer fire officers who hold a
Chief Officer position. Individuals without this experience will
be unable to contribute to the educational process and utilize
the information in a timely manner.

Fire Tec 164 Fire Instructor 1B . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

2

Fire Tec 201 Wildland Fire Suppression Tactics  . . . . . . . . . . . . . . .

1.5

COURSES
Fire Tec 220 Fire Command 2A—Command Tactics at Major Fires . .

2

Fire Tec 221 Fire Command 2B—Management of Haz-Mat
Incidents  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

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2

Fire Tec 202 Hazardous Materials Incident Commander . . . . . . . .

1.5

Fire Tec 203 Basic Wildland Firefighting Safety  . . . . . . . . . . . . . . .

1.5

Fire Tec 204 Fire—Arson Detection  . . . . . . . . . . . . . . . . . . . . . . . . .

.5

Fire Tec 205 Incident Management II  . . . . . . . . . . . . . . . . . . . . . . .

1.5

Fire Tec 209 Incident Command System: Field Observer/
Display Processor  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

1.5

Fire Tec 213 Incident Command System: Operations Section Chief

2

Fire Tec 220 Fire Command 2A-Command Tactics at Major Fires

2

Fire Tec 221 Fire Command 2B-Management of Haz-Mat Incidents

2

Fire Tec 223 Fire Command 2D-Planning for Large-Scale Disasters

2

Fire Tec 224 Fire Command 2E-Wildland Fire Tactics  . . . . . . . . . .

2


FIRE TECHNOLOGY COURSES

FIRE TEC 1 FIRE PROTECTION ORGANIZATION
Units: 3  Transfer: CSU*
Hours: 3 lecture
Introduction to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; fire strategy and tactics; and components of the incident command system.

FIRE TEC 3 FIRE BEHAVIOR AND COMBUSTION
Units: 3  Transfer: CSU*
Advisory: Completion of or concurrent enrollment in Fire Tec 1 or equivalent recommended
Hours: 3 lecture
Theory and fundamentals of how and why fires start, spread, and are controlled; an in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents, and fire control techniques.

FIRE TEC 4 FIRE PROTECTION EQUIPMENT AND SYSTEMS
Units: 3  Transfer: CSU*
Advisory: Completion of or concurrent enrollment in Fire Tec 1 or equivalent
Hours: 3 lecture
Design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers.

FIRE TEC 5 FIRE PREVENTION TECHNOLOGY
Units: 3  Transfer: CSU*
Advisory: Completion of or concurrent enrollment in Fire Tec 1 or equivalent recommended
Hours: 3 lecture
History and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationship of fire prevention with fire safety education and detection and suppression systems.

FIRE TEC 7 FUNDAMENTALS OF FIRE SERVICE OPERATIONS
Units: 3  Transfer: CSU*
Advisory: Completion of or concurrent enrollment in Fire Tec 1 or equivalent recommended
Hours: 3 lecture
Fundamentals of fire department organization, management, and resources, and the use of those resources to control various emergencies.

FIRE TEC 8 BUILDING CONSTRUCTION FOR FIRE PROTECTION
Units: 3  Transfer: CSU*
Advisory: Completion of or concurrent enrollment in Fire Tec 1 or equivalent recommended
Hours: 3 lecture
Components of building construction that relate to fire safety. Elements of construction and design of structures shown to be key factors when inspecting buildings, preplanning fire operations, and operating at fires. Development and evolution of building and fire codes studied in relationship to past fires in residential, commercial, and industrial occupancies.

FIRE TEC 10 FIRE FIGHTER OCCUPATIONAL SAFETY AND SURVIVAL
Units: 3  Transfer: CSU*
Hours: 3 lecture
Techniques of injury prevention and promotion of safety while conducting fire service operations. Covers use of safety equipment and self-contained breathing apparatus, federal and state occupational safety regulations, and analysis of fire fighter fatalities through case studies.

FIRE TEC 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU*
Designed for Fire Technology students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in Catalog.
FIRe TEC 41 HazarDous MaTeriaLs—OPERATIONAL LEVEL
Units: .5-1 Transfer: CSU*
Hours: As scheduled for a total of 16 lecture hours for .5 unit; 24 lecture hours for 1 unit
Operational level course covering common alarms, roles, and responsibilities, legal aspects, exposure and response safety, medical surveillance, recognition and identification, basic chemistry, personal protective equipment, scene management, preincident planning and table-top exercises. Meets federal and state training requirements. For state certification, students must achieve 80% or better on the written certification examination.

FIRe TEC 50 Basic FiReFiGhTer TRAINING
Units: 2 Transfer: CSU*
Hours: As scheduled for a total of 45 hours (36 lecture, 9 laboratory)
Training in proper techniques to effectively and safely perform as a member of a fire crew in controlling and suppressing wildfire. Includes physics of fire behavior, complexities and inter-relationships of weather, topography, and wildland fuel beds in fire behavior, Incident Management Organization, personal safety, situational awareness and hazard recognition.

FIRe TEC 73 FiRe HYDRAULICS
Units: 3 Transfer: CSU*
Hours: As scheduled for a total of 54 lecture hours
Review of applied mathematics; hydraulic laws; and application of formulas and mental calculation to hydraulics and water supply problems, as applied to the fire service.

FIRe TEC 74 FiRe APPARATUS AND EquIPMeNT
Units: 3 Transfer: CSU*
Hours: 3 lecture
Principles and techniques for maintaining and operating fire service pumping and other mobile apparatus. Fire service equipment and apparatus troubleshooting; principles and techniques of preventive maintenance; construction and operation of fire service pumps and pump accessories; basic highway operating techniques for fire apparatus; fire apparatus specifications and testing procedures.

FIRe TEC 75 WilDlAND FiRe CONTROL
Units: 3 Transfer: CSU*
Hours: 3 lecture
Principles and techniques of wildland fire prevention, behavior, control, and suppression. Covers legal areas of wildland fire protection, mutual aid, fire investigating and reporting methods, and ecology factors of wildland and urban interface fires. Complies with S-190, Basic Wildland Fire Behavior certification.

FIRe TEC 77 PuBlic eduCATion I
Units: 2
Hours: As scheduled for a total of 40 lecture hours
Systematic planning process for public education; communication skills; program evaluation; working with the media; integrating programs into schools; gaining community support; fire safety for children; interviewing and counseling juvenile fire setters; creating and using audio/visual resources, and idea and resource sharing.

FIRe TEC 95 iNTERNSHIP iN FiRe TECHNOLOGY
Units: .5-4 Transfer: CSU*
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of fire suppression, fire prevention, fire training, public education, or other fire protection functions. Provides new on-the-job technical training under the direction of a worksite supervisor allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

FIRe TEC 100 FiRe FiGhTer I ACADEMY
Units: 17.5
Prerequisite: Completion of Fire Tec 1 or equivalent with a grade of “C” or better, possession of a current Emergency Medical Technician certificate, and submission of a letter of health
Corequisite: concurrent enrollment in P.E. 200
Hours: As scheduled for a total of 476 hours (237 lecture, 239 laboratory)
Designed for entry level fire fighters. Approved by the CA State Board of Fire Services and Fire Marshal’s office. When combined with a specified experience component leads to state certification as a Fire Fighter I. Includes: fire behavior, control techniques, ground operations, hazardous materials, incident command system, confined space awareness, auto extrication, salvage operations, and wildland fire behavior/control. Certificate of Completion issued with grade of “C” or better in both Fire Tec 100 and P.E. 200. Physically demanding program. Materials fee required.
FIRE TEC 150 COMMAND 1A-PRINCIPLES
FOR COMPANY OFFICERS
(FORMERLY FIRE TEC 60)
Units: 2 Transfer: CSU*
Prerequisite: Completion of Fire Tec 241 or a certified Basic Incident Command System course
Hours: As scheduled for a total of 40 lecture hours
Initial decision and action processes at a working fire: includes function of command, fire chemistry, fire behavior, pre-fire planning, fireground safety, resources, operations, and management.

FIRE TEC 151 COMMAND 1B-INCIDENT MANAGEMENT FOR COMPANY OFFICERS
(FORMERLY FIRE TEC 61)
Units: 2 Transfer: CSU*
Prerequisite: Completion of Fire Tec 150 and Fire Tec 242 or completion of a State Fire Marshal certified Fire Command 1A class and certified ICS 200 and ICS 300 classes
Hours: As scheduled for a total of 40 lecture hours
Responsibilities of the “first-in” officer at incidents. Emphasis on the development of management and decision-making practices required for the successful command of multi-casualty, hazardous materials, and wildland fire incidents.

FIRE TEC 152 FIRE COMMAND 1C—I-ZONE FIRE FIGHTING FOR COMPANY OFFICERS
Units: 2 Transfer: CSU*
Prerequisite: Fire Tec 150, Fire Tec 151, and Fire Tec 241; or Fire Command 1A and 1B certified by the California State Fire Marshal and a certified Basic Incident Command System course
Hours: As scheduled for a total of 40 lecture hours
Designed around the responsibilities of the company officer at a wildland/urban interface incident. Emphasis on fire environment, incident command system, I-zone operation principles, safety and survival, and I-zone incident operations. Meets established federal and state training guidelines.

FIRE TEC 154 FIRE INVESTIGATION 1A—FIRE CAUSE, ORIGIN AND DETERMINATION
(FORMERLY FIRE TEC 62)
Units: 2 Transfer: CSU*
Hours: As scheduled for a total of 40 lecture hours
Skills to determine the cause of fire, its human and environmental effects, and to develop interpersonal skills needed to successfully investigate, apprehend, and convict an arsonist.

FIRE TEC 155 FIRE INVESTIGATION 1B—TECHNIQUES OF FIRE INVESTIGATION
(FORMERLY FIRE TEC 63)
Units: 2 Transfer: CSU*
Prerequisite: Completion of Fire Tec 154
Hours: As scheduled for a total of 40 lecture hours
Fire behavior; building construction; techniques required for incendiary, accidental, fatal, vehicle, wildland, and juvenile fire investigations; report writing; and evidence collection and preservation procedures.

FIRE TEC 157 MANAGEMENT AND SUPERVISION FOR COMPANY OFFICERS
(FORMERLY FIRE TEC 64)
Units: 2 Transfer: CSU*
Hours: As scheduled for a total of 40 lecture hours
Concepts of supervision and management for fire company officers: decision-making for supervisors, leadership styles and techniques, policy development and procedures, time management, stress management, personnel appraisal, and guidelines.

FIRE TEC 159 FIRE PREVENTION 1A—FIRE INSPECTION PRACTICES
(FORMERLY FIRE TEC 65)
Units: 2 Transfer: CSU*
Advisory: Completion of Fire Tec 3, 4, and 5
Hours: As scheduled for a total of 40 lecture hours
Provides a broad, technical overview of fire prevention codes and ordinances, inspection practices, extinguishing systems, and key hazards including flammable and combustible liquids and gases, explosives, and fireworks.

FIRE TEC 160 FIRE PREVENTION 1B—FIRE PROTECTION SYSTEMS & SPECIAL HAZARDS
(FORMERLY FIRE TEC 66)
Units: 2 Transfer: CSU*
Prerequisite: Fire Tec 159 or State Fire Marshal certified Fire Prevention 1A course
Hours: As scheduled for a total of 40 lecture hours
Focuses on the codes, ordinances, and statutes that pertain to fire prevention practices in California, including flammable and combustible liquids and gases, hazardous materials and explosives, fire extinguishers, fire suppression systems and detection and alarm systems.

FIRE TEC 163 FIRE INSTRUCTOR 1A
(FORMERLY FIRE TEC 68)
Units: 2 Transfer: CSU*
Hours: As scheduled for a total of 40 lecture hours
Developing course outlines, concepts of learning, behavioral objectives, using lesson plans, the psychology of learning, evaluation of effectiveness, and occupational analysis related to fire service instruction.
FIRE TEC 164 FOREST INSTRUCTOR 1B
(FORMERLY FIRE TEC 69)
Units: 2
Prerequisite: Completion of Fire Tec 163 or State Fire
Marshal certified Fire Instructor 1A course
Hours: As scheduled for a total of 40 lecture hours
Preparation of course outlines, establishing levels of instruction, constructing behavioral objectives and lesson plans, instructional aid development, fundamentals of testing and measurements, test planning and evaluation techniques, and tools related to fire service.

FIRE TEC 201 WILDLAND FIRE SUPPRESSION TACTICS
Units: 1.5
Hours: As scheduled for a total of 32 hours (27 lecture, 5 laboratory)
Application of tactical skills, including fireline construction, handcrews, mechanical equipment, water and chemicals, air operations, wildland/urban interface to mitigate wildland fires, and tactical deployment of resources into common objectives. Professional training course designed for chief and company officers, strike team or task force leaders.

FIRE TEC 202 HAZARDOUS MATERIALS INCIDENT COMMANDER
Units: 1.5
Hours: As scheduled for a total of 32 hours (28 lecture, 4 laboratory)
Principles and concepts of hazardous materials emergencies using the Incident Command System to safely and completely manage Haz Mat events. Professional training course prepares participants to assume role of Incident Commander and other command and general staff positions. For state certification, students must achieve 80% or better on the written examination.

FIRE TEC 203 BASIC WILDLAND FIREFIGHTING SAFETY
Units: 1.5
Hours: As scheduled for a total of 40 hours (24 lecture, 16 laboratory)
Basic skills and requirements to fight wildland fires safely and effectively as a team, including terminology, equipment, wildland fire behavior, strategies and tactics. Professional training course for local government fire protection personnel responding to wildland fires as part of a CA Division of Forestry strike team or task force.

FIRE TEC 204 FIRE— ARSON DETECTION
Units: .5
Hours: As scheduled for a total of 16 lecture hours
Introductory course covering why individuals set fires. Accidental and incendiary cause of fires, determining the point of origin, fatal fires, legal aspects of fire scene searches and courtroom testimony. For certification, students must achieve 80% or better on the written examination.

FIRE TEC 205 INCIDENT MANAGEMENT II
Units: 1.5
Hours: As scheduled for a total of 36 hours (29 lecture, 7 laboratory)
Principles of incident organization for Initial Attack Commanders. Covers management and command concepts, size-up, strategy and tactics, resources, and communications.

FIRE TEC 220 FIRE COMMAND 2A— COMMAND TACTICS AT MAJOR FIRES
Units: 2
Prerequisite: Completion of Fire Tec 150 and Fire Tec 241 or completion of the equivalent California State Fire Marshal courses
Hours: As scheduled for a total of 40 lecture hours
Emphasis on the latest emergency management techniques, efficient utilization of resources and implementation of fireground safety principles when commanding multiple alarms or large suppression forces.

FIRE TEC 221 FIRE COMMAND 2B: MANAGEMENT OF HAZ-MAT INCIDENTS
(FORMERLY FIRE TEC 401B)
Units: 2
Prerequisite: Completion of Fire Tec 151, Fire Tec 220, and Fire Tec 241, or completion of the equivalent California State Fire Marshal courses
Hours: As scheduled for a total of 40 hours lecture
Prepares individuals to manage a serious hazardous materials incident. Includes information and databases, organizations, agencies and institutions involved in hazardous materials response and research, planning for haz-mat problems, legislation, litigation, and liabilities.

FIRE TEC 222 FIRE COMMAND 2D— PLANNING FOR LARGE-SCALE DISASTERS
Units: 2
Prerequisite: Completion of Fire Tec 241 and Fire Tec 220 or completion of the equivalent California State Fire Marshal courses
Hours: As scheduled for a total of 40 lecture hours
Emphasis on principles of disaster planning and management, fire service emergency plans, emergency operations centers, roles of local, state, and federal OES and emergency management agencies, multi-hazard and ICS planning techniques. Case studies analysis of natural and man-made disasters.
FIRE TEC 224 FIRE COMMAND
2E—WILDLAND FIRE TACTICS
Units: 2
Prerequisite: Completion of Fire Tec 220 and 242, or completion of the equivalent California State Fire Marshal courses
Hours: As scheduled for a total of 40 lecture hours
Designed for Chief Officers having command responsibilities at wildland fires. Course emphasizes fire safety, weather effects, fuels, fire behavior, initial attack methods, support equipment, topographic maps, air attack operations, strategy and tactics.

FIRE TEC 232 WILDFIRE ORIGIN AND CAUSE DETERMINATION
Units: 1
Hours: As scheduled for a total of 18 lecture hours
Fire origin and cause determination of wildland fires. Emphasis on fire behavior, issues of identification and observation, investigation tools, fire scene activities, area of origin, wildfire causes, evidence, reporting, and documentation. (Credit/No Credit Grading)

FIRE TEC 241 INCIDENT COMMAND SYSTEM I-200
(FORMERLY FIRE TEC 200)
Units: .5
Hours: As scheduled for a total of 12 lecture hours
Introduction to Incident Command System (ICS) National Training curriculum. Includes principles and features, organization overview, incident facilities, resources, and common responsibilities.

FIRE TEC 242 INCIDENT COMMAND SYSTEM I-300
(FORMERLY FIRE TEC 230)
Units: 1
Prerequisite: Completion of Fire Tec 241 or a certified Basic Incident Command System course
Hours: As scheduled for a total of 26 lecture hours
Covers organization and staffing, incident resources management, organizing for incidents or events, incident and event planning and air operations within the Incident Command System national training curriculum.

FIRE TEC 243 INCIDENT COMMAND SYSTEM I-400
(FORMERLY FIRE TEC 240)
Units: 1
Prerequisite: Completion of Fire Tec 242 or equivalent Incident Command System I-300 course
Hours: As scheduled for a total of 22 lecture hours
Covers command and general staff, unified command, major incident management and area command within the Incident Command System national training curriculum. (Credit/No Credit Grading)

FIRE TEC 244 INCIDENT COMMAND SYSTEM:
DIVISION/GROUP SUPERVISOR
(FORMERLY FIRE TEC 208)
Units: 1
Prerequisite: Completion of Fire Tec 241 or a Federal/State certified Basic Incident Command System course
Hours: As scheduled for a total of 24 hours (16 lecture, 8 laboratory)
Management skills to perform specific responsibilities as Division/Group Supervisor for all-risk incidents within the Incident Command System. Emphasis on planning, supervision, and coordination.

FIRE TEC 245 INCIDENT COMMAND SYSTEM:
FIELD OBSERVER/DISPLAY PROCESSOR
(FORMERLY FIRE TEC 209)
Units: 1.5
Prerequisite: Completion of Fire Tec 241 or a federal/state certified Basic Incident Command System course
Hours: As scheduled for a total of 32 lecture hours
Meets the training needs of the field observer/display processor in the planning section of the Incident Command System. Includes identifying and interpreting maps, map calculations, observation aids, mapping from aircraft, field observations, processing and displaying data.

FIRE TEC 246 INCIDENT COMMAND SYSTEM:
STRIKE TEAM/TASK FORCE LEADER
(FORMERLY FIRE TEC 212)
Units: 1.5
Prerequisite: Completion of Fire Tec 241 or a Federal/State certified Basic Incident Command System course
Hours: As scheduled for a total of 32 lecture hours
Orientation to the basic responsibilities of a strike team/task force leader. Includes strike team concept, types of strike teams, pre-incident responsibilities, assembly and travel, incident arrival and check-in, assigned/available and out-of-service status, and demobilization/release.

FIRE TEC 247 INCIDENT COMMAND SYSTEM: OPERATIONS SECTION CHIEF
(FORMERLY FIRE TEC 213)
Units: 2
Prerequisite: Completion of Fire Tec 242, 244, and 246
Hours: As scheduled for a total of 40 lecture hours
Management skills needed to perform as an Operations Section Chief under the Incident Command System. Includes command concepts, organization, briefing, operations plan, action plan, supervising operations, staging areas, and identification and release of excess resources.
FIRE TEC 262 FIRE INVESTIGATION 2A: 
CRIMINAL & LEGAL PROCEDURES 
Units: 2 
Prerequisite: Completion of Fire Tec 154 and 155 or Fire Investigation 1A and 1B certified by CA State Fire Marshal’s Office 
Hours: As scheduled for a total of 40 lecture hours 
Provides skills to successfully investigate, apprehend, and convict arsonists. Topics include explosives, surveillances, search and seizure, search warrants, report writing, trial process and courtroom demeanor.

FIRE TEC 263 FIRE INVESTIGATION 2B: 
FIELD CASE STUDIES 
Units: 2 
Prerequisite: Completion of Fire Tec 262 or Fire Investigation 2A certified by California State Fire Marshal’s Office 
Hours: As scheduled for a total of 40 lecture hours 
Advanced instruction in fire scene investigation, includes documenting the scene with photography and sketching, collecting evidence, preparing court exhibits, interviewing and interrogating suspects. Extensive use of simulations for presenting an arson case to a district attorney and judge and testifying as an expert witness.

FIRE TEC 400 SELECTED TOPICS IN FIRE TECHNOLOGY 
Units: .5-4 
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

FIRE TEC 608 BASIC STRUCTURAL FIREFIGHTER 
Units: 4.5 (Non-Degree Credit) 
Hours: As scheduled for a total of 150 hours (55 lecture, 95 laboratory) 
Entry-level course for volunteer firefighters. Topics include fire behavior, safety, personal protective equipment, forcible entry, rescue, ground ladders, hoses, fire streams and nozzles, and fire control principles. (Credit/No Credit Grading)

FIRE TEC 610 SWIFT WATER RESCUE AWARENESS 
Units: .5 (Non-Degree Credit) 
Hours: As scheduled for a total of 9 lecture hours 
A basic swift water rescue course for emergency services. Includes water rescue environments and hazards, legal obligations, site safety, water rescue equipment, hydrology and swift water hazards, and low- to high-risk rescue options. May be taken four times for credit. (Credit/No Credit Grading)

FIRE TEC 611 SWIFT WATER RESCUE TECHNICIAN I 
Units: .5 (Non-Degree Credit) 
Hours: As scheduled for a total of 24 hours (8 lecture, 16 laboratory) 
Basic swift water rescuer skills including water dynamics and hydrology, handling hazards and obstacles, rescuer safety, basic boat-related rescues, technical rescue systems, and controlling in-water contact rescues. Professional training course for those responsible for conducting swift water rescues. (Credit/No Credit Grading)

FIRE TEC 612 SWIFT WATER RESCUE ADVANCED 
Units: .5 (Non-Degree Credit) 
Prerequisite: Fire Tec 611 or completion of a certified Swiftwater Rescue Technician I course within previous 3 years 
Hours: As scheduled for a total of 32 hours (8 lecture, 24 laboratory) 
Advanced swift water rescue emphasizing specialized experimental equipment, rescue/recovery management, safety and protection considerations, active and passive search techniques, rope management, and problem solving exercises. May be taken four times for credit. (Credit/No Credit Grading)

FIRE TEC 615 LOW ANGLE RESCUE REFRESHER 
Units: .5 (Non-Degree Credit) 
Prerequisite: Completion of Fire Tec 638 or a California state approved course of Rescue Systems for Engine Companies 
Hours: As scheduled for a total of 9 lecture hours 
New and modified heavy rescue scene operations techniques, emphasizing procedures, rescue ropes and equipment, ladder rescue systems, safety lines and anchors, haul systems and advantages. May be taken three times for credit. (Credit/No Credit Grading)
FIRE TEC 618 FIRE CONTROL 4A AND 4B—FLAMMABLE GASES AND LIQUIDS  
Units: .5 (Non-Degree Credit)  
Hours: As scheduled for a total of 11 hours (8 lecture, 3 laboratory)  
Examines flammable gases and liquids including characteristics, hazards, and tactics, through case studies and field exercises. (Credit/No Credit Grading)

FIRE TEC 620 WILDLAND CHAIN Saws  
Units: .5 (Non-Degree Credit)  
Hours: As scheduled for a total of 16 hours (8 lecture, 8 laboratory)  
Chain saw nomenclature, safety equipment, proper operating techniques, OSHA safety requirements, routine maintenance, field problems and repair. (Credit/No Credit Grading)

FIRE TEC 621 WILDLAND CHAIN SAW TECHNIQUES  
Units: 1 (Non-Degree Credit)  
Hours: As scheduled for a total of 24 hours (16 lecture, 8 laboratory)  
Chain saw operations emphasizing tree terminology, safety aspects, state/federal requirements, recognizing and handling hazards, felling and bucking procedures, brushing and fire lines. (Credit/No Credit Grading)

FIRE TEC 624 CDF FIREFIGHTER BASIC ACADEMY  
Units: 2.5 (Non-Degree Credit)  
Hours: As scheduled for a total of 67 hours (44 lecture, 23 laboratory)  
Basic firefighting course covering fire physics, vegetation fire terminology, general safety, self-contained breathing apparatus, fireline safety, aircraft safety, mobile equipment, fire equipment, and wildland and structure firefighting. Meets minimum training requirements for California CDF Firefighter I personnel. (Credit/No Credit Grading)

FIRE TEC 626 WILDLAND FIRE FIGHTER SURVIVAL  
Units: .5 (Non-Degree Credit)  
Hours: As scheduled for a total of 9 lecture hours  
Review of incidents where firefighters were injured or killed. Emphasis on errors in judgment and/or execution to identify what went wrong and how to prevent future accidents. May be taken four times for credit. (Credit/No Credit Grading)

FIRE TEC 630 IN-SERVICE TRAINING  
Units: .5-3 (Non-Degree Credit)  
Prerequisite: Fire Tec 100 or equivalent fire academy course  
Hours: As scheduled for a total of 20 hours per unit (16 lecture, 4 activity)  
Satisfies standards for in-service training for fire service personnel in areas of knowledge, techniques and perishable skills. Includes administrative issues, engine and truck operations, fire control, emergency medical services, hazardous materials, rescues, command and control, fire prevention, pre-fire planning, specialized equipment and wellness and fitness. May be repeated for credit to meet legally mandated education/training requirements. (Credit/No Credit Grading)

FIRE TEC 632 AUTO EXTRICATION  
Units: .5 (Non-Degree Credit)  
Hours: As scheduled for a total of 16 hours (8 lecture, 8 laboratory)  
Essentials of scene evaluation and extrication size up, types of tools and their application, how to remove windows, doors, roofs, and safely perform extrications from vehicles with various passenger restraint systems. (Credit/No Credit Grading)

FIRE TEC 634 DRIVER OPERATOR 1A—EMERGENCY VEHICLE OPERATION  
Units: 1.5 (Non-Degree Credit)  
Prerequisite: California Driver License, Class B, firefighter restricted (minimum)  
Hours: As scheduled for a total of 40 hours (25 lecture, 15 laboratory)  
Designed to provide the student with information on driver techniques for emergency vehicles and techniques of basic inspection and maintenance for emergency vehicles. (Credit/No Credit Grading)

FIRE TEC 635 DRIVER/OPERATOR 1B—PUMP OPERATIONS  
Units: 1.5 (Non-Degree Credit)  
Prerequisite: California Driver License, Class B, firefighter restricted (minimum)  
Hours: As scheduled for a total of 40 hours (25 lecture, 15 laboratory)  
Provides information, theory, methods, and techniques for operating fire service pumps. Subjects include types of pumps, engine and pump gauges, maintenance, unsafe pumping conditions, pressure conditions, pressure relief devices, cooling systems, water supplies, drafting, field hydraulics, and pumping operations. (Credit/No Credit Grading)
FIRE TEC 637 CONFINED SPACE AWARENESS  
Units: .5 (Non-Degree Credit)  
Hours: As scheduled for a total of 9 lecture hours  
Codes that impact operations within confined spaces. Information to identify confined spaces and permit confined spaces. Hazards of confined spaces, equipment and procedures required to perform a rescue safely and legally. For certification, students must achieve 80% or better on the written examination. (Credit/No Credit Grading)

FIRE TEC 638 LOW ANGLE RESCUE  
Units: .5 (Non-Degree Credit)  
Hours: As scheduled for a total of 24 hours (8 lecture, 16 laboratory)  
Principles of heavy rescue scene operations, including organization, procedures, resources, rescue ropes and related equipment, rescuer packaging, ladder rescue systems, safety lines, anchor and brake systems, and rappelling. (Credit/No Credit Grading)

FIRE TEC 640 HAZARDOUS MATERIALS TECHNICIAN 1A, BASIC CHEMISTRY  
Units: 2 (Non-Degree Credit)  
Prerequisite: Completion of Fire Tec 41 or approved Federal/State equivalent course  
Hours: As scheduled for a total of 40 lecture hours  
Basic aspects of chemistry and physics related to management of a hazardous materials incident. Covers physical and chemical properties of matter, atomic structure, periodic table, metals and non-metals, salts, hydrocarbons and derivatives, forms of energy, the combustion process, flammable and combustible liquids. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (Credit/No Credit Grading)

FIRE TEC 641 HAZARDOUS MATERIALS TECHNICIAN 1B, APPLIED CHEMISTRY  
Units: 1.5 (Non-Degree Credit)  
Prerequisite: Completion of Fire Tec 640 or approved Federal/State equivalent course(s)  
Hours: As scheduled for a total of 40 hours (24 lecture, 16 laboratory)  
Basic terminology and theory of chemistry as it relates to hazardous materials. Covers chemical aspects of the hazard classes, toxicology, including hazard and risk assessment, function and use of detection instruments, monitoring hazardous atmospheres and use of a field identification kit to identify unknown solids and liquids. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (Credit/No Credit Grading)

FIRE TEC 642 HAZARDOUS MATERIALS TECHNICIAN 1C-INCIDENT CONSIDERATIONS  
Units: 1.5 (Non-Degree Credit)  
Prerequisite: Completion of Fire Tec 641 or approved Federal/State equivalent course(s)  
Hours: As scheduled for a total of 40 hours (26 lecture, 14 laboratory)  
Hazardous materials on-scene incident considerations. Covers data research, meteorological considerations, protective actions, personal protective equipment, incident command aspects, site safety concepts, legislative and regulatory measures influencing emergency response and contingency planning. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (Credit/No Credit Grading)

FIRE TEC 643 HAZARDOUS MATERIALS TECHNICIAN 1D, TACTICAL FIELD OPERATIONS  
Units: 1.5 (Non-Degree Credit)  
Prerequisite: Completion of Fire Tec 642 or approved Federal/State equivalent course(s)  
Hours: As scheduled for a total of 40 hours (24 lecture, 16 laboratory)  
Experience with tactical field operations. Covers confinement, control, hazmat triage and sabotage, performing in chemical protective clothing, preservation of evidence, decontamination, and emergency medical system considerations. Meets standards prescribed by the CA State Fire Marshal and Office of Emergency Services. (Credit/No Credit Grading)

FIRE TEC 644 HAZARDOUS MATERIALS SPECIALIST 1F  
Units: 1.5 (Non-Degree Credit)  
Prerequisite: Completion of Fire Tec 643 or approved Federal/State equivalent course  
Hours: As scheduled for a total of 40 hours (32 lecture, 8 laboratory)  
Introduction to mitigation techniques. Includes plugging, patching and repairing methods; advanced chemical field identification testing procedures, and fixed facility repair considerations. Part one of a two part series leading to certification as a Hazardous Materials Specialist. Meets requirements of CA Code of Regulations Title 8, Section 519(q). (Credit/No Credit Grading)

FIRE TEC 645 HAZARDOUS MATERIALS SPECIALIST 1G  
Units: 1 (Non-Degree Credit)  
Prerequisite: Completion of Fire Tec 644 or approved federal/state equivalent course  
Hours: As scheduled for a total of 40 hours (16 lecture, 24 laboratory)  
Covers material presented in Hazardous Materials Courses 1A-1F in an environment of scenario based full scale exercises. Participants evaluated for their ability to perform and be certified as a member of a Hazardous Materials Team. (Credit/No Credit Grading)
FIRE TEC 646 HAZ-MAT FIRST RESPONDER
OPERATIONAL/DECONTAMINATION
Units: .5 (Non-Degree Credit)
Prerequisite: Completion of Fire Tec 41 or equivalent
California State Fire Marshal’s Office course
Hours: As scheduled for a total of 9 lecture hours
Meets California state requirements for those required to have haz-mat decontamination training. Includes principles of decontamination, Haz-Mat Incident Command System, decontamination leader and corridor, chemical protective clothing (CPC), respiratory protection, using self-contained breathing apparatus and CPC, medical considerations for wearing CPC, and emergency hand signals. (Credit/No Credit Grading)

FIRE TEC 647 EMERGENCY RESPONSE TO TERRORISM
Units: .5 (Non-Degree Credit)
Advisory: Fire Tec 41 or Hazardous Materials Operational Level certification recommended
Hours: As scheduled for a total of 16 lecture hours
Training in terrorist incident management operations and tactical decision making. Emphasis on recognizing a terrorist incident. Protective measures, control of the incident, and establishment of an incident management structure. Complies with federal requirements for anti-terrorism training for first responders. (Credit/No Credit Grading)

FIRE TEC 650 RESCUE SYSTEMS I
Units: 1 (Non-Degree Credit)
Hours: As scheduled for a total of 44 hours (16 lecture, 28 laboratory)
Required for CA Urban Search and Rescue basic and light operational level training. Emphasis on rescue systems, ropes and related equipment, heavy object operations, breaking and breaching operations, ladder rescues, and emergency shoring. (Credit/No Credit Grading)

FIRE TEC 655 RAPID INTERVENTION CREW TACTICS
Units: .5 (Non-Degree Credit)
Prerequisite: Fire Tec 100 or equivalent CA State Fire
Marshal training and assignment to participate by a fire agency
Hours: As scheduled for a total of 16 hours (8 lecture, 8 laboratory)
A safety course for structural fire fighters. Covers history of fire fighter injuries and fatalities, techniques of rapid intervention crews, techniques of self-survival, and application of rescue methods. May be taken four times for credit. (Credit/No Credit Grading)

FIRE TEC 690 INTRODUCTION TO WILDLAND FIRE BEHAVIOR S-190
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 9 lecture hours
Wildland fire behavior factors important for understanding fire spread principles and applying safe and effective suppression techniques. Meets standards prescribed by the National Wildfire Coordination Group and the CA Incident Command Certification System for S-190 certification. (Credit/No Credit Grading)

FIRE TEC 691 INTERMEDIATE WILDLAND FIRE BEHAVIOR S-290
Units: 1.5 (Non-Degree Credit)
Prerequisite: Completion of Fire Tec 690 or a certified S-190 course as prescribed by the National Wildfire Coordinating Group
Hours: As scheduled for a total of 32 lecture hours
Covers fire behavior prediction skills and knowledge related to wildland fires. Meets standards prescribed by the National Wildfire Coordinating Group and the CA Incident Command Certification System for S-290 certification. (Credit/No Credit Grading)

FIRE TEC 692 WILDLAND FIRE BEHAVIOR CALCULATIONS—S390
Units: .5 (Non-Degree Credit)
Prerequisite: Fire Tec 691 or completion of a S-290 course as prescribed by the National Wildfire Coordination Group and qualified as a Single Resource Boss
Hours: As scheduled for a total of 16 lecture hours
Introduces fire behavior calculations by manual methods. Covers determinants and interpretations of fire behavior inputs and outputs and skills to help in fire management decisions. Meets standards prescribed by the National Wildfire Coordinating Group and the CA Incident Command Certification System for S-390 certification. (Credit/No Credit Grading)

FIRE TEC 693 ENGINE BOSS S-231
Units: .5 (Non-Degree Credit)
Prerequisite: Completion of Fire Tec 691 and National Wildfire Coordinating Group Course S-230
Hours: As scheduled for a total of 9 lecture hours
Covers tactical decisions required of an Engine Boss to safely suppress a fire. Emphasis on coordination, communication and tactical safety. Complies with National Wildfire Coordinating Group 310-1 Standards for S-231 certification. (Credit/No Credit Grading)
Forestry

SCiences & Mathematics
Dean: Karen Walters Dunlap
Associate Dean: Vacant
Division Office: Ht 4
Faculty: N. Lemerise
Liaison Counselor: B. Ruud

The Forestry program is designed to prepare graduates for transfer to four-year institutions offering four-year degrees in forestry and other natural resource-related fields. Summer employment opportunities are excellent because the program allows students to work through the summer and into late fall, making a long work season.

Assistance is given in finding positions in forest surveying, recreation, timber management, fire fighting, road engineering, insect and disease control, logging, forest product manufacturing, nursery practices, and general conservation.

Transfer Major Requirements in Forestry are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Four-year graduates combine some field work with planning and decision making tasks in a variety of forest management positions. California State Polytechnic University at San Luis Obispo and Humboldt State University currently accept courses for lower division transfer. In addition, the completion of this program has been approved as substituting for two years of experience toward qualifying for a California Professional Forester’s License.

Forestry—A.S. Degree
The program provides an excellent vocational opportunity for students by combining technical education and practical seasonal work experience. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43.

Required Courses

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<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Fire Tec 75 Wildland Fire Control</td>
<td>3</td>
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<tr>
<td>Forestry 1 Introduction to Forestry</td>
<td>3</td>
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<td>Forestry 14 Forest Measurements</td>
<td>4</td>
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<td>Forestry 17 Forest Ecology</td>
<td>3</td>
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<td>Forestry 24 Forest Resource Protection</td>
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<tr>
<td>Forestry 41 Introduction to Forest Mensuration</td>
<td>3</td>
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<tr>
<td>Nat.Res. 10 Conservation of Natural Resources</td>
<td>3</td>
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<tr>
<td>Nat.Res. 25 Wildland Trees &amp; Shrubs (Dendrology)</td>
<td>4</td>
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Total Units Required: 27

Recommended Forestry Electives: Forestry 2, 46
Recommended Electives: Ag, 221, Bio.Sc. 2, Chem. 2A, C.I.S. 50, Comm.St. 1, Econ. 1A, 1B, English 1A, Geology 1, 1L, Math. D

Forestry Courses

Forestry 1 Introduction to Forestry
Units: 3
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
A broad study of forests and their management. Subject matter includes forest policy, identification of local native trees, tree physiology, forest soils, forest protection, silviculture, the relationship of forestry to the “Greenhouse Effect,” and the “Deforestation of Tropical Forests.”

Forestry 2 Introduction to Forestry Field Study
Units: .5-1
Hours: As scheduled for a total of 18 lecture hours per unit
Designed to cover field study activities and topics relevant to forestry not covered by regular catalog offerings. Topics and places vary with each subtitle. Course content and unit credit to be determined by the division (see current class schedule listing). Each subtitle may be taken once.

Forestry 2a Sierra Nevada Transect
Units: .5
Field trip to transect the Sierra Nevada to identify plant communities and discuss geologic features in relation to those communities.

Forestry 2b Coastal Field Excursion
Units: .5
Field trip to study the relationship of climatic conditions to the ecology of coastal plant species.

Forestry 2c Ft. Bragg: Coastal Forestry
Units: 1
Field trip to study coastal forestry practice and identification and silvics of the Pacific forest timber type.

Forestry 2d Placerville: Forest Genetics
Units: .5
Field trip to the Institute of Forest Genetics and the U.S. Forest Service nursery.

Forestry 2e Sierra and Nevada County Transects
Units: .5
Field trip to study forest vegetation in Sierra and Nevada counties.

Forestry 2f Forest Recreation
Units: .5
Field trip to study recreational area planning on public land.

Forestry 2g Forest Management: Private Lands
Units: .5
Field trip to Sierra Pacific Timber Company to study forest management and silviculture on private timber land.
FORESTRY 2H MEASUREMENTS IN FORESTRY
Units: .5   Transfer: CSU
Field trip to study forest measurement applications.

FORESTRY 2J WINTER RECREATION
(Inactive 2-24-98)

FORESTRY 2K MAP AND COMPASS USE
Units: .5   Transfer: CSU
Introduction to use of topographic maps and hand compass.

FORESTRY 2P KLAMATH MOUNTAIN DENDROLOGY AND ECOLOGY
Units: 1   Transfer: CSU
Field trip to identify the unique vegetation and geology of the Russian Peak Wilderness area in Siskiyou County, California.

FORESTRY 5 ENVIRONMENTAL CONSERVATION
Units: 3   Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
Natural resources considered separately and as an integral part of the whole resource picture. Conservation practices involving water, soil, air, land, oil, minerals, recreation, forests, and economic or social problems. Human influence on the environment, population growth, resource demands, and computer simulations will be covered.

FORESTRY 14 FOREST MEASUREMENTS
Units: 4   Transfer: CSU
Prerequisite: Completion of Math. 47 or equivalent
Hours: 8 (2 lecture, 6 laboratory)
Forest engineering, public land surveying, distance direction and elevation measuring, topographic map reading and construction, log scaling and tree measurements under field conditions.

FORESTRY 17 FOREST ECOLOGY
Units: 3   Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 5 (2 lecture, 3 laboratory)
Ecological principles applied to forest management. Production ecology, biogeochemistry, disturbances, environmental factors, populations, community ecology, forest succession, and forest classifications and description.

FORESTRY 24 FOREST RESOURCE PROTECTION
Units: 4   Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Damage to forest resources caused by destructive agents. Identification of destructive agents, application of effective indirect and direct control practices. Integration of forest resource protection practices into total forest management.

FORESTRY 28 INDEPENDENT STUDY
Units: 1-3   Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

FORESTRY 32 WINTER MOUNTAIN SPORTS AREA OPERATIONS & MANAGEMENT
Units: 2
Hours: As scheduled for a total of 54 hours (27 lecture, 27 laboratory)
Overview of various ski industry employment opportunities. Classroom and field sessions with emphasis upon ski patrol/avalanche control, ski school/races, lift operations and maintenance, heli-ski/snowboarding, slope grooming, and snow making.

FORESTRY 38 AVALANCHE SAFETY
Units: 4   Transfer: CSU
Hours: 6 (3 lecture, 3 laboratory)
Designed to help winter enthusiasts assess avalanche hazard through field observation of weather, terrain, and the mountain snowpack. Field sessions in stability evaluation, terrain analysis, and route selection will be conducted to apply theory learned in the classroom. Principles of avalanche control and avalanche rescue will be taught.

FORESTRY 39 AVALANCHE SAFETY II
Units: 2   Transfer: CSU
Prerequisite: Completion of Forestry 38 or equivalent
Hours: As scheduled for a total of 54 hours (27 lecture, 27 laboratory)
Stability evaluation, route selection, and decisions made in a field context relative to backcountry travel and avalanche safety.

FORESTRY 41 INTRODUCTION TO FOREST MENSUERATION
Units: 3   Transfer: CSU
Prerequisite: Completion of Forestry 14
Hours: 7 (1 lecture, 6 laboratory)
Field and classroom study of the principles and skills required in forest measurement. Log scaling, timber cruising and sampling procedures, log grading, and volume computation will be studied in detail.
FORESTRY 45 REMOTE SENSING IN FORESTRY
Units: 3
Prerequisite: Completion of Math. 47 or equivalent
Hours: 5 (2 lecture, 3 laboratory)
Image interpretation, recognition and mapping of forest associations, estimation of stand parameters with black-and-white, color, and color-infrared films. Linear and area measurements, relief displacement, planimetric mapping, and thermal infrared in forestry applications.

FORESTRY 46 REGIONAL FIELD TRIP
Units: 1
Hours: As scheduled for a total of 54 field laboratory hours
Designed to broaden students’ perspective of the interrelationships of all previous course work. Visits to timber harvesting areas, forest product plants, forest management and protection installations, state parks, and national parks. May be taken twice for credit.

FORESTRY 95 INTERNSHIP IN FORESTRY
Units: .5-4
Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

FORESTRY 300 SELECTED TOPICS IN FORESTRY
Units: .5-4
Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

FORESTRY 400 SELECTED TOPICS IN FORESTRY
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

FORESTRY 601 CHAINSAW OPERATIONS
Units: 1.5 (Non-Degree Credit)
Hours: As scheduled for a total of 45 hours (18 lecture, 27 laboratory)
Proper and safe techniques of chainsaw use. Routine maintenance and simple repairs included.

FORESTRY 602 FLOOD TRAINING
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 9 lecture hours
Principles of flood water control, debris management, erosion control, and levee stabilization.

FORESTRY 606 NATURAL RESOURCE ORIENTATION
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 9 lecture hours
Overview of occupational opportunities with federal, state, and private employers. Focuses on personal attributes necessary for success and on-the-job application procedures.

FORESTRY 607 PLANT IDENTIFICATION
Units: 1 (Non-Degree Credit)
Hours: As scheduled for a total of 18 lecture hours
Classification, nomenclature, and identification of common trees and shrubs of the Sierra Nevada. Plant identification skills will be acquired through recognition of plant characteristics.

FORESTRY 609 PLANT COMMUNITIES AND ECOLOGY
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 9 lecture hours
Survey of the major plant communities of the Sierra Nevada and Central Valley regions of California, emphasizing the ecological interdependencies between component species and the environment. Will include coverage of riparian and other wetland habitats, grassland, chaparral, oak and mixed woodland, coniferous forest, and alpine communities. Geographical distribution patterns of selected plant communities, with consideration of the principle environmental and historical factors that determine those patterns, are examined.

FORESTRY 696A CONSERVATION AWARENESS
Units: 1 (Non-Degree Credit)
Hours: As scheduled for a total of 18 lecture hours
An overview of conservation and management of natural resources designed to provide understanding of the basics of natural resource conservation, ecology, and conservation measures that lead to a responsible lifestyle respectful of the earth.

FORESTRY 696C CONSERVATION AWARENESS
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 9 lecture hours
An overview of forestry and forest management practices, including basic objectives of silviculture, principles of multiple use and sustained yield, basic forest ecology, and management perspectives for the 21st century.
French

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: I. Sadler
LIAISON COUNSELORS: D. Quadros, V. Skeels

The active part that the United States is now taking in world affairs makes it desirable that a greater number of Americans than ever before have a knowledge of foreign languages and cultures. A language background should be of intrinsic value. The acquisition of desired practical communication skills in the study of modern foreign language is the primary objective. This can be accomplished by the oral approach, motivated by lectures, and implemented by the language laboratory.

TRANSFER MAJOR REQUIREMENTS in Foreign Language are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Foreign Language are qualified are in teaching, business, foreign services, law enforcement, nursing, secretarial, and diplomatic services.

FRENCH COURSES

FRENCH 1 ELEMENTARY FRENCH
Units: 4 Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Listening, speaking, reading, and writing in French. Fundamentals of French pronunciation and grammar. Introduction to the culture of the French-speaking people. Corresponds to two years of high school study. (CAN FREN 2) (With French 2, CAN FREN SEQ A)

FRENCH 2 ELEMENTARY FRENCH
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of French 10A and 10B, or French 1, or two years of high school French
Hours: 5 (4 lecture, 1 laboratory)
Continuation of French 1 emphasizing the basic skills of listening, speaking, reading, and writing. Further study of pronunciation and grammar fundamentals. Further exposure to the culture of the French-speaking people. (CAN FREN 4)(With French 1, CAN FREN SEQ A)

FRENCH 3 INTERMEDIATE FRENCH
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of French 2 or three years of high school French
Hours: 5 (4 lecture, 1 laboratory)
Designed for those who have had previous training in the French language. Review of grammar with increased emphasis upon speaking and linguistic structure of the language, reading of excerpts from works of French-speaking authors, study of cultural distinctions among the French-speaking peoples, writing skills, and translations of culturally significant reading selections. (CAN FREN 8)(With French 4, CAN FREN SEQ B)

FRENCH 4 INTERMEDIATE FRENCH
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of French 3 or four years of high school French
Hours: 5 (4 lecture, 1 laboratory)
Designed for those who have had previous training in the French language. Study of advanced grammar with increased emphasis upon the skills of reading and interpreting works of French literature. Greater focus upon writing and speaking skills. (CAN FREN 10)(With French 3, CAN FREN SEQ B)

FRENCH 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

FRENCH 300 SELECTED TOPICS IN FRENCH
Units: .5-4 Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Geographic Information Systems (GIS)

(SEE DESIGN DRAFTING AND GEOGRAPHY)
Geography

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: S. Booth, C. Cox
LIAISON COUNSELORS: R. Elliott, B. Hawkes, C. West

The Geography Department offers courses in both physical and cultural geography, as well as in weather and climate. These courses give a general educational background for those wishing to pursue an academic major in geography or meteorology.

TRANSFER MAJOR REQUIREMENTS in Geography or Meteorology are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

GEOGRAPHY COURSES

**GEOG. 1 PHYSICAL GEOGRAPHY**
Units: 3  
Transfer: CSU/UC
Advisory: Completion of English 1A or ESL 40W
Hours: 3 lecture
Study of earth's landforms, spatial location and processes including the atmosphere, its weather, climate regions, the hydrosphere; oceans, clouds, rivers; the biosphere and the solid earth, its landforms and the forces that shape them. (CAN GEOG 2)

**GEOG. 1L PHYSICAL GEOGRAPHY LABORATORY**
Units: 1  
Transfer: CSU/UC
Prerequisite: Completion of English 1A or ESL 40W
Hours: 3 laboratory
Earth's physical systems, atmosphere, weather & climate, landforms and fluvial systems; includes map reading and aerial photography interpretation.

**GEOG. 2 CULTURAL GEOGRAPHY**
Units: 3  
Transfer: CSU/UC
Advisory: Completion of English 1A or ESL 40W
Hours: 3 lecture
Diverse patterns of cultural development including population, religion, languages, political systems and other societal characteristics. Analysis of spatial differences of cultures including housing types, city planning, agricultural techniques, and popular and folk customs. Investigation of humans as the primary modifier of the physical landscape within the limits of the earth's resources. (CAN GEOG 4)

**GEOG. 3 GEOPGRAPHY OF CALIFORNIA**
Units: 3  
Transfer: CSU/UC
Advisory: Completion of English 1A or ESL 40W
Hours: 3 lecture
An introduction to California’s diversified geography including climate, landforms, natural vegetation, and water resources, the cultural landscapes of ethnic diversity, our Native American past, urban and agricultural regions, and the economic challenges of the future. Emphasis on cultural diversity, human alteration of the landscape, contemporary problems and resource competition.

**GEOG. 4 WEATHER AND CLIMATE**
Units: 3  
Transfer: CSU/UC
Advisory: Completion of English 1A or ESL 40W
Hours: 3 lecture
The elements and controls of weather and climate—atmospheric heating, the heat budget, air circulation and winds, moisture, clouds, and precipitation; world climates, their elements and classifications; climate variations and changes.

**GEOG. 4L WEATHER AND CLIMATE LABORATORY**
Units: 1  
Transfer: CSU/UC
Advisory: Completion of English 1A or ESL 40W
Hours: 3 laboratory
Practical application of weather principles and concepts taught in Weather and Climate course through lab exercises and access of weather data through computers.

**GEOG. 5 WORLD REGIONAL GEOGRAPHY**
Units: 3  
Transfer: CSU/UC
Advisory: Completion of English 1A or ESL 40W
Hours: 3 lecture
An introduction to the world’s major geographic regions; their cultural practices, politics, economics, religions, history and environmental characteristics. Location and analysis of important geographic features including mountains, rivers, countries and major cities of Asia, Australia, Africa, North America, Europe and South America.

**GEOG. 11 URBAN GEOGRAPHY OF SAN FRANCISCO**
Units: 1  
Transfer: CSU
Hours: As scheduled for a total of 30 hours (12 lecture, 18 laboratory)
This field course explores the cultural, economic and urban geography of San Francisco. Introduction to the area's diversified geography including its location, ethnic diversity, urban settlement patterns and an overview of historical and economic regions.
GEOG. 12 HISTORICAL GEOGRAPHY OF NORTHERN CALIFORNIA COMMUNITIES
Units: 1  Transfer: CSU
Hours: As scheduled for a total of 30 hours (12 lecture, 18 laboratory)
This field course explores cultural and historical geography of Northern California communities. Introduction to Northern California’s diversified geography including physical landforms, economic diversity, settlement patterns and history of the Northern California communities. May be taken four times for credit.

GEOG. 14 FIELD GEOGRAPHY OF YOSEMITE AND THE EASTERN SIERRA
Units: 2  Transfer: CSU
Hours: As scheduled for a total of 54 hours (27 lecture, 27 laboratory)
Examination of physical and cultural geography of Yosemite Valley/the Eastern Sierra. Emphasis of fluvial and glacial landforms, geological patterns, weather, and climate regions, and the distribution of water resources. Cultural geographies include patterns of Native American settlements, pioneer encampments and historic structures.

GEOG. 15 FIELD GEOGRAPHY OF NORTHERN CALIFORNIA
Units: 5  Transfer: CSU
Hours: As scheduled for a total of 13 hours (7 lecture, 6 laboratory)
Investigation of cultural and physical geography of a region in Northern California. Introduction to the area's diversified geography including its location, physical landforms, economic diversity, urban settlement patterns or an overview of historical and cultural regions. Topical emphasis will vary from class to class. May be taken four times for credit.

GEOG. 16 FIELD GEOGRAPHY
Units: 1-2  Transfer: CSU
Hours: As scheduled for a total of 30 hours per unit (12 lecture, 18 laboratory)
Field lecture courses to regions of geographic interest to include physical, cultural, urban and/or historical elements. May be taken four times for credit.

GEOG. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

GEOG. 85 APPLICATION OF GIS AND RELATED TECHNOLOGIES
Units: 1  Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours
Investigation of GIS case studies used in government and industry; explores how all industries use GIS with emphasis on natural resource management and watershed analysis. Additional focus on remote sensing and aerial photography. Hands-on experience using Global Positioning Systems (GPS) technology.

GEOG. 90 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS)(ALSO D.D.90)
Units: 3  Transfer: CSU
Hours: 4 (3 lecture, 1 activity)
Interdisciplinary course to explore Geographic Information Systems (GIS) as used in the organization, analysis, and communication of spatial information. Explores how GIS is used in numerous fields to map and solve spatial problems, such as those in natural resources, earth and life sciences, environmental planning, local government, business and marketing, transportation, and others.

GEOG. 91A INTRODUCTION TO ARC GIS (ALSO GEOLOGY 91A, ART/DES. 67,C.I.S. 87)
Units: 1  Transfer: CSU
Advisory: Completion of Geography 90 or equivalent recommended
Hours: As scheduled for a total of 18 lecture hours
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases, and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields.

GEOG. 91B INTERMEDIATE ARC GIS
Units: 1  Transfer: CSU
Prerequisite: Completion of or concurrent enrollment in Geog. 91A
Advisory: Completion of Geography 90 or equivalent
Hours: As scheduled for a total of 18 lecture hours
Builds on principles from Geog. 91A focusing on GIS analysis, ArcTools and ArcView extensions. Emphasis on advanced functions, spatial analysis and 3D modeling used in environmental and watershed assessment, natural hazard analysis, business site analysis, resource management and land-use planning.
GEOG. 95 INTERNSHIP IN GEOGRAPHY  
Units: .5-4  
Transfer: CSU*  
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

GEOG. 300 SELECTED TOPICS IN GEOGRAPHY  
Units: .5-4  
Transfer: CSU/UC*  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline when a topic is different from previously completed course. See Selected Topics page in catalog.

Geology  
(ALSO SEE EARTH SCIENCE AND GEOGRAPHY)

SCIENCES & MATHEMATICS  
DEAN: Karen Walters Dunlap  
ASSOCIATE DEAN: Vacant  
DIVISION OFFICE: Ht 4  
FACULTY: A. Amigo, F. DeCourten, H. Dodson, R. Hilton  
LIAISON COUNSELORS: C. Morris, C. West

The Geology Department offers courses that deal in the earth's history, structure and economic resources. These courses meet the needs for those students wishing to pursue an academic major and subsequent career in one of the many aspects of geology as well as provide individual courses for those wishing to enhance their understanding of the planet on which we live.

TRANSFER MAJOR REQUIREMENTS in Geology are available in the Counseling Center. Students should consult an instructor, a counselor, and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

GEOLOGY — A.S. DEGREE  
A two-year Associate Degree in Geology prepares students to work in entry-level technical positions in the geological profession, including such fields as environmental assessment and mitigation, hydrology, mining, agronomy, conservation, and interpretation. Additional professional opportunities are available for students with advanced degrees, and the associate degree represents an important step towards that goal. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES  
UNITS
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Geology 1 Physical Geology</td>
<td>3</td>
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<tr>
<td>Geology 1L Physical Geology Lab</td>
<td>1</td>
</tr>
<tr>
<td>Geology 3 Historical Geology</td>
<td>3</td>
</tr>
<tr>
<td>Geology 3L Historical Geology Lab</td>
<td>1</td>
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</tbody>
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PLUS 4-6 ADDITIONAL UNITS FROM:  
Chem. 3A and Chem. 3B General Chemistry OR  
Chem. 1A General Chemistry  
5-6
OR  
Physics 10 Descriptive Physics AND  
Physics 11 Physical Science Laboratory  
4
OR  
Physics 2A General Physics OR  
Physics 4A Principles of Physics  
4

PLUS AT LEAST 8-10 UNITS FROM:  
Astron. 10 Elementary Astronomy  
3
Chem. 1B General Chemistry  
5
E.Sci. 14 Natural Disasters  
3
E.Sci. 15 Introduction to Oceanography  
3
E.Sci. 15L Introduction to Oceanography Laboratory  
1
Geology 2 California Geology  
3
Geology 6 Introduction to Minerals & Rocks  
3
Geology 50 Geology of National Parks & Monuments  
3
Geology 51A thru 51G Saturday Field Geology  
5
Geology 52F Weekend Field Geology  
1
Geology 53F Field Geology of Western North America  
2
Geog. 4 Weather & Climate  
3
Geog. 4L Weather & Climate Laboratory  
1
Geog. 90/D.D. 90 Introduction to Geographic Information Systems (GIS)  
3
Math. 29 Pre-Calculus Mathematics  
4
Math. 30 Analytical Geometry & Calculus  
4-5
Physics 2B General Physics  
4
Physics 4B Principles of Physics  
4
Physics 4C Principles of Physics  
4

TOTAL UNITS REQUIRED: 20-24

GEOLOGY COURSES  

GEOLOGY 1 PHYSICAL GEOLOGY  
Units: 3  
Transfer: CSU/UC  
Advisory: Concurrent enrollment in Geology 1L recommended; completion of English 50, or eligibility for English 11, or equivalent strongly recommended  
Hours: 3 lecture  
Dynamic nature of earth’s geologic processes. Earthquakes, volcanoes, mountain building, landslides, rocks, minerals, fossils, erosion, glaciation, deserts, shorelines, groundwater, and plate tectonics. (With Geology 1L, CAN GEOL 2)
GEOLOGY 1L PHYSICAL GEOLOGY LABORATORY
Units: 1  Transfer: CSU/UC
Prerequisite: Completion of or concurrent enrollment in Geology 1
Hours: 3 laboratory
Minerals, rocks, fossils, aerial photos, topographic and geologic maps. Field trip(s) may be required during regular lab time. (With Geology 1, CAN GEOL 2)

GEOLOGY 2 CALIFORNIA GEOLOGY
Units: 3  Transfer: CSU/UC
Advisory: Previous enrollment in a geology, earth science, or physical geography course recommended
Hours: 3 lecture
The geologic provinces within California and their geologic history. Emphasizes the geologic processes of California’s varied landscape, its faults and volcanoes, and the forces that continue to change them.

GEOLOGY 3 HISTORICAL GEOLOGY
Units: 3  Transfer: CSU/UC
Advisory: Previous geology, physical geology, physical geography, or earth science course recommended; concurrent enrollment in Geology 3L recommended
Hours: 3 lecture
Geologic history of the earth and its life, plate tectonics, geologic processes, evolution, and paleontology. (With Geology 3L, CAN GEOL 4)

GEOLOGY 3L HISTORICAL GEOLOGY LABORATORY
Units: 1  Transfer: CSU/UC
Prerequisite: Completion of or concurrent enrollment in Geology 3 required
Hours: 3 laboratory
Hands-on learning in fossils, sedimentary rock structures, textures, age relationships, environments, and units. Includes geologic map interpretation, correlation, and selected regional geologic problems. (With Geology 3, CAN GEOL 4)

GEOLOGY 4 ENVIRONMENTAL GEOLOGY
Units: 3  Transfer: CSU/UC
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
Understanding the interaction of people and the earth. Includes environmental studies of natural and human-induced hazards. Topics include earthquakes, volcanism, landslides, shorelines, flooding, groundwater management, geologic resource recovery, pollution, global warming, ozone depletion, hazardous waste disposal, and land subsidence.

GEOLOGY 4L ENVIRONMENTAL AND ENGINEERING GEOLOGY LABORATORY
Units: 1  Transfer: CSU
Advisory: Completion of or concurrent enrollment in Geology 4 recommended
Hours: 3 laboratory
Examination and appraisal of selected sites for the purpose of understanding geologic and environmental impact reports emphasizing earthquake faults, hill slope stability, and the quantity and quality of ground water.

GEOLOGY 6 INTRODUCTION TO MINERALS AND ROCKS
Units: 3  Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Rocks and minerals of the earth’s crust. Crystal forms and systems as means of identification. Methods of testing and identifying rock forming and metallic ore minerals. Laboratory exercises provide instruction on mineral identification using physical properties, blowpipe analysis, and chemical testing. Emphasis on developing field identification skills for geologists, prospectors, and collectors. Field trip(s) required.

GEOLOGY 16G FIELD PALEONTOLOGY AND ANCIENT ENVIRONMENTS (ALSO BIO.SCI. 16G)
Units: 1-4  Transfer: CSU
Investigations into the ecology of environments in the geologic past through field work at fossil sites. Comparisons/contrasts made between ancient (fossil) communities and the current (living) communities of selected study sites. Differences and similarities between the plants and animals will be used as evidence to reconstruct ancient ecological communities. May be taken four times for credit.

GEOLOGY 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

GEOLOGY 50 GEOLOGY OF NATIONAL PARKS AND MONUMENTS
Units: 3  Transfer: CSU
Hours: 3 lecture
Geology of selected national parks and monuments of North America.
GEOL 51 SATURDAY FIELD GEOLOGY
Units: .5 (for each subtitle) Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours for each subtitle, including 1-hour lecture prior to trip
Field lecture course designed to teach students the geology of selected geological areas in Northern California.

GEOL 51A SIERRA NEVADA AND WESTERN BASIN AND RANGE PROVINCES
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Field lecture course designed to teach students the geology of portions of the Sierra Nevada and Western Basin and Range Provinces. Sites along I-80 and Tahoe Basin are examined.

GEOL 51B GREAT VALLEY AND COAST RANGE PROVINCES
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Field lecture course designed to teach students the geology of portions of the Great Valley and the Coast Range Provinces. Sites along I-80, the Russian River, the Pacific Coast, and the San Andreas Fault are examined.

GEOL 51C GREAT VALLEY, COAST RANGES, AND SUTTER BUTTES
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Field lecture course designed to teach students the geology of portions of the Great Valley, the Coast Ranges, and the Sutter Buttes. Sites west from Roseville through Woodland and Capay Valley to Clear Lake, the Central Sacramento Valley, and the Sutter Buttes are examined.

GEOL 51D WESTERN SIERRA NEVADA AND THE MOTHER LODGE
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Field lecture course designed to teach students the geology of portions of the Western Sierra Nevada and the Mother Lode. Sites along Highway 49 are examined.

GEOL 51E MAJOR ROCK UNITS OF THE NORTHERN SIERRA
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Field lecture course designed to teach students the geology of major rock units of the Northern Sierra backcountry. Moderate day hike is involved.

GEOL 51G IGNEOUS ACTIVITY OF THE NORTHERN SIERRA NEVADA
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Field lecture course designed to teach students the geology of igneous activity of the Northern Sierra Nevada backcountry. Sites in the Alpine Meadows and Sierra Valley Region are examined. Moderate day hike is involved.

GEOL 52F WEEKEND FIELD GEOLOGY
Units: 1 Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours, including 2-hour lecture prior to trip
Weekend (sometimes including Friday) field trips to selected locations of geologic interest in California and bordering areas. May be taken three times for credit.

GEOL 53F FIELD GEOLOGY OF WESTERN NORTH AMERICA
Units: 2 Transfer: CSU
Hours: As scheduled for a total of 54 hours (27 lecture, 27 laboratory) including 2-hour lecture prior to week of trip
One-week field trip to selected areas of geologic interest. Emphasis placed on the geologic history of the many parks and monuments of the west. A two-hour pre-session prior to the trip is required. Transportation fee. May be taken three times for credit.

GEOL 91A INTRODUCTION TO ARC GIS (ALSO GEOG. 91A, ART/DES. 67, C.I.S. 87)
Units: 1 Transfer: CSU
Advisory: Completion of Geography 90 or equivalent recommended
Hours: As scheduled for a total of 18 lecture hours
Introduction to Geographic Information Systems (GIS) mapping software used to manage, analyze and display spatial information. Create reports and map layouts, query geographic databases, and solve spatial problems. Emphasis on using GIS software for practical applications in the fields of natural resource management, disaster mapping, cartographic design, urban planning, business and other related fields.

GEOL 95 INTERNSHIP IN GEOLOGY
Units: 5-4 Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.
GELOGY 300 SELECTED TOPICS IN GEOLOGY
Units: .5-4 Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

GEOLGY 400 SELECTED TOPICS IN GEOLOGY
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

German

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
LIAISON COUNSELORS: D. Quadros, V. Skeels

The active part that the United States is now taking in world affairs makes it desirable that a greater number of Americans than ever before have a knowledge of foreign languages and cultures. A language background should be of intrinsic value. The acquisition of desired practical communication skills in the study of modern foreign language is the primary objective. This can be accomplished by the oral approach, motivated by lectures, and implemented by the language laboratory.

TRANSFER MAJOR REQUIREMENTS in Foreign Language are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Foreign Language are qualified are in teaching, business, foreign services, law enforcement, nursing, secretarial, and diplomatic services.

GERMAN COURSES

GERMAN 1 ELEMENTARY GERMAN
Units: 4 Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Introduction to German language—speaking, listening, linguistic and grammatical structure, reading, learning pronunciation and intonation patterns—together with discussion of unique cultural characteristics of the German-speaking peoples. Students will memorize dialogues, become knowledgeable of utilizing a substantial vocabulary, and conduct translations of culturally meaningful reading selections. (CAN GERM 2)(With German 2, CAN GERM SEQ A)

GERMAN 2 ELEMENTARY GERMAN
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of German 10A and 10B, or German 1, or two years of high school German
Hours: 5 (4 lecture, 1 laboratory)
Designed for those who have had previous training in the German language. Continuation of German 1. Emphasis on speaking, listening, linguistic and grammatical structure, reading, writing. Further study of learning pronunciation and intonation patterns, together with continued discussion of unique cultural characteristics of the German-speaking peoples. Students will continue to memorize dialogues, become knowledgeable of utilizing a substantial vocabulary, and conduct translations of culturally meaningful reading selections. (CAN GERM 4)(With German 1, CAN GERM SEQ A)

GERMAN 3 INTERMEDIATE GERMAN
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of German 2 or three years of high school German
Hours: 5 (4 lecture, 1 laboratory)
Designed for those who have had previous training in the German language. Continuation of German 2. Review of grammar with increased emphasis upon speaking and linguistic structure of the language, reading of excerpts from works of German authors, study of cultural distinctions among the German-speaking peoples, writing skills, and translations of culturally significant reading selections. (CAN GERM 8)(With German 4, CAN GERM SEQ B)
GERMAN 4 INTERMEDIATE GERMAN
Units: 4   Transfer: CSU/UC
Prerequisite: Completion of German 3 or four years of high school German
Hours: 5 (4 lecture, 1 laboratory)
Designed for those who have had previous training in the German language. Continuation of German 3. Review of grammar, culture of German-speaking peoples with increased emphasis upon the skills of reading, interpreting, and analyzing works of German language writings with focus upon literature. Greater focus upon writing, speaking, and analyzing skills. (CAN GERM 10)(With German 3, CAN GERM SEQ B)

GERMAN 28 INDEPENDENT STUDY
Units: 1-3   Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

Health Education

HEALTH, PHYSICAL EDUCATION, RECREATION/ATHLETICS
DEAN: John Volek
DIVISION OFFICE: Ft
FACULTY: D. Brownell, M. Conway, J. Forkum, K. Linde
LIAISON COUNSELORS: C. Epting-Davis, S. Muraki

Health Education stresses the mental, social and physical well being of the individual.

TRANSFER MAJOR REQUIREMENTS in Health Education, Recreation, Physical Education, and Athletics are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements.

Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Four-year graduates in Health Education, Recreation, Physical Education, and Athletics qualify for employment in private industry and recreational agencies and are prepared to seek teaching credentials in elementary or secondary education.

HEALTH EDUCATION COURSES

H.E.D. 1 STANDARD FIRST AID/COMMUNITY CPR
Units: 2   Transfer: CSU/UC
Hours: 2 lecture/discussion
Includes recognition and treatment for cardiac and respiratory emergencies, first aid for bleeding, shock, burns, poisoning, stroke, and various injuries. Satisfies the basic level of training required by the Occupational Safety and Health Administration. American Red Cross Standard First Aid and Community CPR certificates issued upon successful completion of Red Cross requirements.

H.E.D. 2 HEALTH EDUCATION
Units: 3   Transfer: CSU/UC
Hours: 3 lecture
Survey of major health problems, such as emotional health, drug abuses (alcohol, tobacco, and other commonly abused drugs), nutrition, personal fitness, family planning (courtship, marriage, fertility management), chronic diseases, infectious diseases, over-population, and pollution.

H.E.D. 3 BASIC LIFE SUPPORT PROFESSIONAL
Units: .5   Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
For EMTs, firefighters, peace officers, nurses, and others required by law to have first response level CPR training. Covers CPR adult single and two-rescuer, infant and child, and foreign body airway obstruction for adults, infants, and children. Meets standards of CPR certifying agencies. May be taken four times for credit.

H.E.D. 696 ENVIRONMENTAL AND INDUSTRIAL INJURIES
Units: 5-1 (Non-Degree Credit)
Hours: As scheduled for a total of 18 lecture hours per unit
The American Red Cross Standard First Aid and Adult CPR class covering cardiac and respiratory emergencies, first aid for bleeding, shock, burns, poisoning, stroke, and various injuries. Satisfies the basic level of training required by the Occupational Safety and Health Administration.
Health Sciences

SIERRA COLLEGE—NEVADA COUNTY CAMPUS
DEAN: Neal Allbee
AREA OFFICE: Room 205, Roseville Gateway Center,
Phone (916) 781-6250
LIAISON COUNSELORS: C. Epting-Davis, S. Muraki

The majority of Sierra College’s Health Sciences courses are designed to prepare the student for employment at the “basic skills” level in a variety of health occupations. Other courses in this area are designed to improve or update the skills of individuals currently employed in rendering health care. There are no degree patterns or transfer majors in this area.

HEALTH SCIENCES COURSES

H.SCI. 2 EMERGENCY MEDICAL TECHNICIAN I
Units: 5
Prerequisite: Current CPR certification, either Am. Heart Assn.’s course “C” for Health Care Providers or Am. Red Cross Professional Rescuers’ course; proof of a negative Tuberculin (TB) test within the past year and vaccination for measles, mumps, and rubella
Hours: As scheduled for a total of 128 hours (80 lecture, 38 laboratory, 10 field clinical laboratory)
Theory and skills for emergency care of pre-hospital patients. Covers legal and moral aspects, initial assessment, patient stabilization, proper use of equipment, communicable diseases and medical and trauma emergencies. Ten hours of clinical experience required. Successful completion of written and skills test required for eligibility to take the National Registry of EMT examination, a prerequisite for CA EMT certification.

H.SCI. 3 MEDICAL TERMINOLOGY
Units: 3
Transfer: CSU
Hours: 3 lecture
Basic structure of medical words, including prefixes, suffixes, word roots, combining forms and plurals. Pronunciation, spelling, and definitions of medical terms, and an understanding of human anatomy using a body system approach to selected structures, functions, diseases, procedures, and diagnostic tests.

H.SCI. 7 EMERGENCY CARE/FIRST RESPONDER
Units: 3
Hours: 3 lecture
Core knowledge and skills for individuals to provide emergency medical care with a limited amount of equipment. Emphasizes patient assessment and care procedures at the First Responder level. Meets National Curriculum Standards for training First Responders. Certificates issued upon completion with grade of “C” or better.

H.SCI. 20 FIRST AID FOR PUBLIC SAFETY PERSONNEL
Units: 1
Hours: As scheduled for a total of 34 hours (22 lecture, 12 laboratory)

H.SCI. 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

H.SCI. 50 INTRODUCTION TO PARAMEDIC TRAINING
Units: 3.5
Prerequisite: Completion of H.Sci. 2 or equivalent
Hours: As scheduled for a total of 80 hours (60 lecture, 20 laboratory)
Introductory course for students considering a paramedic program. Designed to assist students in evaluating their educational preparedness for studying paramedic curriculum while preparing them for success within a program. Overview of practices, procedures, protocols, and skills applied at the paramedic level of prehospital care. Includes licensing requirements, basic anatomy, physiology, patient assessment, basic drug pharmacology, cardiac electrophysiology, EKGs, intravenous therapy and advanced airway management. No certifications provided.

H.SCI. 600 EMERGENCY MEDICAL TECHNICIAN CONTINUING EDUCATION
Units: 1 (Non-Degree Credit)
Prerequisite: Emergency Medical Technician Certification
Hours: As scheduled for a total of 24 hours (16 lecture, 8 laboratory)
New and updated emergency care methods. Reinforcement of basic knowledge and skills encountered in the pre-hospital setting, including use of an external automated defibrillator. In compliance with California’s continuing education requirements for EMT recertification. Skills competency verification required. May be repeated for credit to meet legally mandated requirements. (Credit/No Credit Grading)
History

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: D. DeFoe, B. Fairchild, D. Kuchera, S. Lamphere, L. Medeiros, A. Myers
LIAISON COUNSELORS: R. Elliott, M. Moon, Reyes Ortega

History is an academic discipline concerned with the manner by which people and institutions of all kinds have become transformed with the passage of time. In the study of history it is more important to learn the skills of finding, interpreting and relating historical information than it is simply to memorize historical data. Through the study of history, students can acquire the techniques of gathering and applying information to gain a perspective on the human condition.

TRANSFER MAJOR REQUIREMENTS in History are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in History are qualified include teaching, state and national park historian, historical archaeologist, and government positions. There are broad areas in the job market where a liberal arts background is needed.

HISTORY COURSES

HISTORY 17A HISTORY OF THE UNITED STATES
Units: 3 Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
History of the United States from its origins to 1877. Emphasis on evolution of colonial societies, the American Revolution and the establishment of the Republic, constitutional and constitutional developments, and emergence of a national political tradition; ethnic and racial pluralism of settlement, growth and development; the market revolution and emergence of democracy; institution of slavery, territorial expansion, and events, issues, and developments culminating in the Civil War and the Reconstruction of the South. (CAN HIST 8) (With History 17B, CAN HIST SEQ_B)

HISTORY 17B HISTORY OF THE UNITED STATES
Units: 3 Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
History of the United States from 1865 to the present. Emphasis on national political, economic, intellectual, and social trends and their impact on constitutional law; industrialization and urbanization; evolution of American ethnic, cultural and racial pluralism; and role of United States in world affairs. Also addresses California state and local issues in a broad, national context. (CAN HIST 10) (With History 17A, CAN HIST SEQ_B)

HISTORY 19A HISTORY OF TRADITIONAL EAST ASIA
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
East Asia from the earliest civilizations to the 17th century. Surveys the major cultural, social, and political traditions and institutions of India, China, Japan, and Southeast Asia. Includes imperial and dynastic developments, artistic and philosophical expression, economies and commerce, impact of pan-Asian Buddhist and Muslim movements.

HISTORY 19B HISTORY OF MODERN EAST ASIA
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
East Asia from the 17th century to present. Topics: Asian societies on the eve of modernization, regional responses to Western imperialism, modern nationalist movements, Asia during the two world wars, and role of Asia in modern global economics and diplomacy. Comparisons of China, Japan, and Indian subcontinent; reference to Korea and Southeast Asia.
HISTORY 20 CALIFORNIA HISTORY
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Comprehensive survey of the history of California from pre-historic to contemporary times. Emphasis on the environment and the three main eras of human settlement: California Indian, Spanish and Mexican, and American periods. Study of diverse Indian groups; various movements of people over time and different perspectives on government, law, economics, and culture. Local, state, regional, national, Pacific Rim, and global issues.

HISTORY 21 CONTEMPORARY UNITED STATES HISTORY
Units: 3  Transfer: CSU*/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Study of American social, political and economic history since 1945; course emphasis on the impact of the Cold War and the struggles of civil rights and social justice that have shaped contemporary America. Also examined: the effects of globalization, technology, environmental challenges and religion in the post-war era.

HISTORY 22 AMERICAN MILITARY HISTORY
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture

HISTORY 23 CHICANO/MEXICAN AMERICAN HISTORY
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Comprehensive survey of the history of Mexican Americans, from pre-Cortesian/Columbian times to the present. Emphasis on experiences and contributions of Chicanos in the United States regarding culture, economy, government and politics.

HISTORY 24 RUSSIAN HISTORY—10TH CENTURY TO PRESENT
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Survey of Russian history from the 10th century to the present. Includes the Slavic, Kievian, Muscovite, and Imperial eras through the Revolutions of 1917, the rise and fall of the Soviet Union, and the formation of the post-Soviet Russian Republic. Emphasis on the major political, social, economic, and cultural trends that define Russian and Soviet civilizations.

HISTORY 27 WOMEN IN AMERICAN HISTORY
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Survey of women’s roles in American history from its pre-colonial origins to the present. Emphasis on women’s experiences and contributions to historical developments regarding social, economic, and cultural life, government, politics, personal issues, the U.S. Constitution, race and racism, ethnicity, and gender.

HISTORY 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

HISTORY 35 HISTORICAL REASONING
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Development and assessment of critical thinking as it is used in the discipline of History. Logical reasoning and various methodologies applied to the study of historical problems and contemporary issues. Emphasis on assigned writing projects, oral history projects, and classroom discussions to develop critical thinking skills.

HISTORY 50 WORLD HISTORY TO 1450
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Survey to 1450 of the political, economic, social, and religious/philosophical characteristics of the major world civilizations— the Mediterranean Basin, Europe, East Asia, India, and Africa— and the interactions among these civilizations. (CAN HIST 14) (With History 51, CAN HIST SEQ C)
HISTORY 51 WORLD HISTORY SINCE 1450
Units: 3  Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Survey from 1450 of the political, economic, social, and cultural developments of world civilizations with a special emphasis on exploring interactions among these civilizations. (CAN HIST 16) (With History 50, CAN HIST SEQ.C)

HISTORY 95 INTERNSHIP IN HISTORY
Units: .5-4  Transfer: CSU*
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships.
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

HISTORY 300 SELECTED TOPICS IN HISTORY
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Human Development and Family

BUSINESS & TECHNOLOGY
DEAN: Stephanie Guevara
DIVISION OFFICE: B 3
ASSOCIATE DEAN: Darlene Jackson
FACULTY: L. Kearney-Capaul, J. Quinlan, C. Silvia
LIAISON COUNSELORS: E. Dickson, T. Maddux, C. Morris, K. Parker

The Human Development and Family degree program provides students with the necessary education for work in child development programs at various levels; teacher assistant, associate teacher, teacher, master teacher, site supervisor, and director. It also includes instruction in infant care, preschool, school-age care, children’s advocacy and child care resource and referral agencies. Students develop skills important to employment as instructional assistants in kindergarten and primary grade classrooms in public schools. Course work prepares students who wish to go into family and social services, as well as work with the elderly.

Specific courses in the human development area afford students the opportunity to enhance their quality of life and to meet general education requirements through courses in lifespan development, marriage, life management, family, parenting, and diversity.

The California Commission on Teacher Credentialing grants permits to those preparing to teach children in early childhood education programs and in after-school child care programs. These permits, known as Child Development Permits, authorize service in state and federal funded child care and development programs. The course work provided by the Sierra College Human Development and Family Department is approved by the California Commission on Teacher Credentialing as meeting the requirements for the California Child Development Permits. Specific Permit requirements are listed after the information on the Early Childhood Skills Certificates/Certificates of Achievement/Degrees offered at Sierra College.

Students should be aware of the different levels of the Permit and are recommended to counsel with a full time Human Development and Family faculty member to discuss how to obtain a Permit at one of the various levels through their course work. Upon completion of the A.A./A.S. degree, a student will possess the course work required to work as a teacher in private and public preschool, as well as child care and development programs.

EARLY CHILDHOOD EDUCATION ASSOCIATE TEACHER SKILLS CERTIFICATE
Upon completion of the following courses with grades of “C” or better, a student will qualify for an Associate Teacher Skills Certificate. Along with this skills certificate and documentation of the appropriate field experience, it is recommended that students confer with an advisor on how to obtain a Permit through the Commission on Teacher Credentialing. This level of course
work authorizes the student to work as a teacher in both state funded child care programs as well as in Title 22, State Department of Health and Human Services programs.

**COURSES**

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<th>COURSES</th>
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<tbody>
<tr>
<td>Hum.Dev. 1 Human Development</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 2 Introduction to Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>Hum.Dev. 4 Child, Family &amp; Community</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 5 Practicum in Early Childhood Education</td>
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</table>

**TOTAL UNITS REQUIRED: 13**

*Grades of “C” or better must be earned in all required courses.

**CHILD DEVELOPMENT PERMIT—ASSOCIATE TEACHER**

A Child Development Associate Teacher Permit authorizes the holder to provide service in the care, development and instruction of children in a child care and development program and supervise an Assistant Permit holder and an Aide. The student must apply to the Commission on Teacher Credentialing for a Child Development Permit at the Associate Teacher level after completing the following 13 units and appropriate work experience:

**CORE COURSES:**

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<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>Hum.Dev. 1 Human Development</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 2 Introduction to Early Childhood Education</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 4 Child, Family &amp; Community</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 5 Practicum in Early Childhood Education</td>
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</tbody>
</table>

Work experience of 50 days of 3 plus hours per day within 2 years in a licensed child care facility

*Grades of “C” or better must be earned in all required courses.

**EARLY CHILDHOOD EDUCATION TEACHER CERTIFICATE**

(FORMERLY CHILDHOOD DEVELOPMENT TEACHER)

This certificate authorizes the holder to provide service in the care, development, and instruction of children in a Title 22 Program. Students may be eligible for application to the Commission on Teacher Credentialing for a Child Development Permit at the Teacher Level.

**REQUIRED COURSES**

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<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>Hum.Dev. 1 Human Development</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 2 Introduction to Early Childhood Education</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 3 Child Study through Observation</td>
<td>3</td>
</tr>
<tr>
<td>Hum.Dev. 4 Child, Family &amp; Community</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 5 Practicum in Early Childhood Education</td>
<td>4</td>
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<tr>
<td>Hum.Dev. 6 Child Nutrition and Health</td>
<td>2</td>
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<tr>
<td>Hum.Dev. 8 Health and Safety in Child Care Programs</td>
<td>1</td>
</tr>
<tr>
<td>Hum.Dev. 10 Advanced Practicum in Early Childhood Education</td>
<td>4</td>
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<tr>
<td>Hum.Dev. 25 Culture &amp; Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 26**

*Grades of “C” or better must be earned in all courses required for the major.

**PLUS 16 ADDITIONAL GENERAL EDUCATION UNITS, INCLUDING AT LEAST ONE COURSE IN EACH OF THE FOLLOWING AREAS:**

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>Humanities</td>
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<tr>
<td>Social/Behavioral Sciences</td>
<td></td>
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<tr>
<td>Mathematics and/or Natural Sciences</td>
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<tr>
<td>English</td>
<td>16</td>
</tr>
</tbody>
</table>

(See pages 42-43)

**TOTAL UNITS REQUIRED: 42**

*Grades of “C” or better must be earned in all courses required for the major.

**CHILD DEVELOPMENT PERMIT—TEACHER**

A Child Development Teacher Permit authorizes the holder to provide service in the care, development and instruction of children in a child care and development program; and supervise an Aide, Assistant Permit and Associate Teacher permit holder. The student must apply to the Commission on Teacher Credentialing for a Child Development Permit at the Teacher level after completing the following 40 units and appropriate work experience:

13 core units (see above)

11 HD/ECE elective units

16 General Education units*

Work experience equaling 175 days of 3 plus hours per day within a 4-year period in a licensed child care facility

*16 GENERAL EDUCATION UNITS MUST BE IN THE AREAS OF:

<table>
<thead>
<tr>
<th>COURSES</th>
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<tbody>
<tr>
<td>English/Language Arts</td>
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<td>Math or Science</td>
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<tr>
<td>Social Sciences</td>
<td></td>
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<tr>
<td>Humanities and/or Fine Arts</td>
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*Grades of “C” or better must be earned in all required courses.

**EARLY CHILDHOOD EDUCATION—A.A. OR A.S. DEGREE**

(FORMERLY CHILDHOOD DEVELOPMENT TEACHER)

Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSES</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>Hum.Dev. 1 Human Development</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 2 Introduction to Early Childhood Education</td>
<td>3</td>
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<tr>
<td>Hum.Dev. 3 Child Study through Observation</td>
<td>3</td>
</tr>
<tr>
<td>Hum.Dev. 4 Child, Family &amp; Community</td>
<td>3</td>
</tr>
<tr>
<td>Hum.Dev. 5 Practicum in Early Childhood Education</td>
<td>4</td>
</tr>
<tr>
<td>Hum.Dev. 6 Child Nutrition and Health</td>
<td>2</td>
</tr>
<tr>
<td>Hum.Dev. 8 Health and Safety in Child Care Programs</td>
<td>1</td>
</tr>
<tr>
<td>Hum.Dev. 10 Advanced Practicum in Early Childhood Education</td>
<td>4</td>
</tr>
<tr>
<td>Hum.Dev. 25 Culture &amp; Diversity in Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED: 26**

*Grades of “C” or better must be earned in all courses required for the major.
EARLY CHILDHOOD EDUCATION—MASTER TEACHER—A.A. OR A.S. DEGREE
(FORMERLY CHILD DEVELOPMENT MASTER TEACHER)
Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES
Hum.Dev. 1 Human Development ....................... 3
Hum.Dev. 2 Introduction to Early Childhood Education ........... 3
Hum.Dev. 3 Child Study through Observation .................. 3
Hum.Dev. 4 Child, Family & Community ..................... 3
Hum.Dev. 5 Practicum in Early Childhood Education .......... 4
Hum.Dev. 6 Child Nutrition and Health ....................... 2
Hum.Dev. 8 Health and Safety in Child Care Programs ........ 1
Hum.Dev. 10 Advanced Practicum in Early Childhood Education . 4
Hum.Dev. 25 Culture & Diversity In Early Childhood Education . 3
Hum.Dev. 38 Adult Supervision: Mentoring in Early Childhood Ed. Settings ........................................ 2

PLUS 6 UNITS IN AN AREA OF SPECIALIZATION FROM:
Hum.Dev. 11 Infant Toddler Development AND .................. 6
OR
Hum.Dev. 12 Infant Caregiving ............................... 6
OR
Hum.Dev. 13 School Age Child AND
Hum.Dev. 14 Programs for School Age Children ............... 6
OR
Hum.Dev. 30/Art 30 Creative Process in Children AND
Art 6A Design OR
Art 10 Art Appreciation .................................. 6
OR
Hum.Dev. 44/English 44 Introduction to Children’s Literature AND
Hum.Dev. 45/English 45 Introduction to Adolescent Literature OR
English 7/ED. 7 Tutoring Elementary Students in Reading ...... 6
OR
Hum.Dev. 16/Music 20 Music for Children AND
Hum.Dev. 43 Music and Movement for Young Children OR
Music 10 Music Fundamentals .............................. 6
OR
Hum.Dev. 21/Psych. 10 Psychology of Marriage AND
Hum.Dev. 22/Soc. 4 The Family OR
Hum.Dev. 23 Dynamics of Parenthood .......................... 6
OR
Hum.Dev. 19 Exceptional Development AND
DFST. 1 American Sign Language I ............................ 7

TOTAL UNITS REQUIRED: 34
*Grades of “C” or better must be earned in all courses required for the major.

CHILD DEVELOPMENT PERMIT—MASTER TEACHER
A Child Development Master Teacher Permit authorizes the holder to provide service in the care, development and instruction of children in a child care and development program. A Master Teacher may also be a coordinator of curriculum and staff development in a child care and development program. The student must apply to the Commission on Teacher Credentialing for a Child Development Permit at the Master Teacher level after completing the following 48 units and appropriate work experience:

13 core units
11 HD/ECE elective units
16 GE units
2 Adult Supervision units (HD 38)
6 specialization units (listed below)

Work experience equaling 350 days of 3 plus hours per day within a 4-year period in a licensed child care facility
Hum.Dev. 11 Infant and Toddler Development AND
Hum.Dev. 12 Infant Caregiving
OR
Hum.Dev. 13 School Age Child AND
Hum.Dev. 14 Programs for School Age Children
OR
Hum.Dev. 30/Art 30 Creative Process in Children AND
Art 6A Design OR Art 10 Art Appreciation
OR
Hum.Dev. 44/English 44 Introduction to Children’s Literature AND
Hum.Dev. 45/English 45 Introduction to Adolescent Literature OR
English 7/Ed. 7 Tutoring Elementary Students in Reading
OR
Hum.Dev. 16/Music 20 Music for Children AND
Hum.Dev. 43 Music & Movement for Young Children OR
Music 10 Music Fundamentals
OR
Hum.Dev. 21/Psych. 10 Psychology of Marriage AND
Hum.Dev. 22/Soc. 4 The Family OR Hum.Dev. 23 Dynamics of Parenthood
OR
Hum.Dev. 25 Culture & Diversity in Early Childhood Education AND
Soc.Sci. 10 Introduction to Ethnic Studies
OR
Hum.Dev. 19 Exceptional Development:Inclusion of Special Needs Children AND
DFST 1 American Sign Language I

*Grades of “C” or better must be earned in all required courses.
**EARLY CHILDHOOD EDUCATION SITE SUPERVISOR—A.A. OR A.S. DEGREE**  
*(FORMERLY CHILD DEVELOPMENT—SITE SUPERVISOR)*  
Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42–43.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>Course Description</th>
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</tr>
<tr>
<td>Hum.Dev. 38 Adult Supervision: Mentoring in Early Childhood Ed. Settings</td>
<td>2</td>
</tr>
<tr>
<td>Hum.Dev. 40 Administration and Supervision of Early Childhood Programs</td>
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<tr>
<td>Hum.Dev. 41A Early Childhood Programs: Financial &amp; Legal Issues</td>
<td>1</td>
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<tr>
<td>Hum.Dev. 41B Early Childhood Programs: Communication &amp; Personnel Management</td>
<td>1</td>
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<tr>
<td>Hum.Dev. 41C Early Childhood Programs: Staff Development &amp; Program Eval.</td>
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<tr>
<td><strong>TOTAL UNITS REQUIRED:</strong> 34</td>
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</tr>
</tbody>
</table>

*Grades of “C” or better must be earned in all courses required for the major.*

**HUMAN DEVELOPMENT & FAMILY COURSES**

**HUM.DEV. 1 HUMAN DEVELOPMENT**  
*Units: 3  Transfer: CSU/UC*  
*Hours: 3 lecture*  
Study of the physical, cognitive, psychosocial and emotional changes in development through the life span. Focuses on the practical application of developmental principles and patterns of growth from conception through late adulthood, including death and bereavement processes. Designed as a foundation course for careers in educational, social service, psychological, health and medical fields.

**HUM.DEV. 2 INTRODUCTION TO EARLY CHILDHOOD EDUCATION**  
*Units: 3  Transfer: CSU*  
*Hours: 3 lecture*  
Historical, theoretical, political and practical aspects of the profession. Emphasis on the preschool years, developmentally appropriate practices, and professional development. Beginning career portfolio is developed. Five hours of observation of curriculum approaches and programs serving young children required.

**HUM.DEV. 3 CHILD STUDY THROUGH OBSERVATION**  
*Units: 3  Transfer: CSU*  
*Prerequisite: Completion of Hum.Dev. 1 and Hum.Dev. 2*  
*Hours: 4 (2 lecture, 2 activity)*  
 PURPOSES. Direct observational experience and application of methods in activity; two hours weekly in off-campus locations.

**HUM.DEV. 4 CHILD, FAMILY & COMMUNITY**  
*Units: 3  Transfer: CSU/UC*  
*Hours: 3 lecture*  
Examines the effects of family and community on a child's development. Interactions among the child, family, school, peers, mass media and community. Emphasis on ethnic diversity, social class, gender roles and their impact on family behavior, values, morals and attitudes.

**HUM.DEV. 5 PRACTICUM IN EARLY CHILDHOOD EDUCATION**  
*Units: 4  Transfer: CSU*  
*Prerequisite: Completion of Hum.Dev. 1 and Hum.Dev. 2*  
*Advisory: Completion of Hum. Dev. 3*  
*Hours: As scheduled for a total of 114 hours (54 lecture, 60 laboratory)*  
Supervised team-teaching in child development centers, drawing upon current, research-based, culturally informed knowledge. Assist teachers in caring for 3- to 5-year-olds and create play-oriented learning environments that promote child development. Sixty hours of supervised teaching required.
HUM.DEV. 6 CHILD NUTRITION AND HEALTH
Units: 2 Transfer: CSU
Hours: 2 lecture
Basic nutrition and health needs of children from infancy to adolescence. Includes nutrition during pregnancy and lactation. Interrelationships of nutrition, health and safety, and environmental hazards. Focus on ways to meet nutritional needs in child care schools and daily life as well as techniques to teach children healthy food habits and basic preparation skills.

HUM.DEV. 8 HEALTH AND SAFETY IN CHILD CARE PROGRAMS
Units: 1 Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours
Education and training in health and safety standards and practices for personnel in child care centers and family child care homes. Training in preventative health practices such as control of infectious diseases, injury prevention, sanitary food handling, sanitation, and emergency preparedness and evacuation.

HUM.DEV. 10 ADVANCED PRACTICUM IN EARLY CHILDHOOD EDUCATION
Units: 4 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 3 and Hum.Dev. 5
Hours: As scheduled for a total of 114 hours (54 lecture, 60 laboratory)
Planning and implementation of early childhood curriculum and teaching techniques through advanced student teaching experience in programs for children three to eight years of age. Emphasis in guiding children’s behavior, use of observations and portfolios for assessment of learning, strategies for effective staff, parent and community relationships, incorporating an integrated approach to curriculum development, and the synthesis of personal and professional development. Sixty hours of supervised teaching required.

HUM.DEV. 11 INFANT AND TODDLER DEVELOPMENT
Units: 3 Transfer: CSU
Hours: 3 lecture
Infant and toddler development from conception to 36 months, including physical, cognitive and psychosocial development. Examines influences on infant development, including families and child care. Explores contemporary research as it applies to programs for infants and toddlers. Recommended for Child Development, education and health career majors, as well as parents.

HUM.DEV. 12 INFANT CAREGIVING
Units: 3 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 11
Hours: 5 (2 lecture, 3 laboratory)
Principles and practices of caring for infants and toddlers, including methods of promoting emotional, social, cognitive, and physical development. Includes information to assess development of children and develop appropriate relationships, environments, and curriculum to meet group and individual needs.

HUM.DEV. 13 SCHOOL AGE CHILD
Units: 3 Transfer: CSU
Advisory: Completion of Hum.Dev. 1
Hours: 3 lecture
Study of the child from 6-12 years of age, including physical, cognitive, social, and moral development. Fundamentals of planning educational and recreational programs with an emphasis on developmentally appropriate practice.

HUM.DEV. 14 PROGRAMS FOR SCHOOL AGE CHILDREN
Units: 3 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 13
Hours: 5 (2 lecture, 3 laboratory)
Study of principles and standards for school-age child development programs. Emphasis on implementation of recommended practices in supervised laboratory settings. Includes planning and presenting developmentally appropriate activities in all curriculum areas. Meets specialization requirement, with Hum.Dev. 13, of Master Teacher Child Development Permit.

HUM.DEV. 16 MUSIC FOR CHILDREN (ALSO MUSIC 20)
Units: 3 Transfer: CSU
Hours: 3 lecture
Principles of teaching and using music in preschool, elementary school, and recreational programs. Problems, methods, and materials in singing, rhythms, creative music, reading, and listening. Recommended for those who use music with groups of children.

HUM.DEV. 17 STORYTELLING
Units: 2 Transfer: CSU
Hours: As scheduled for a total of 36 lecture hours
Storytelling as a means of promoting child development and learning. Explores stories from many cultural traditions. Emphasizes development of confidence and skill in choosing and telling stories. Appropriate for teachers, teacher aides, librarians, recreation leaders, parents, and therapists.
HUM.DEV. 18 PUPPETRY
Units: 1            Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours
The methods, materials, and experiences needed to use puppetry effectively with children. Hands-on involvement; lectures and demonstrations, with practical application for teachers, aides, librarians, therapists, recreation leaders, artists, dramatists, parents, and church and youth group leaders.

HUM.DEV. 19 EXCEPTIONAL DEVELOPMENT: INCLUSION OF SPECIAL NEEDS CHILDREN
Units: 3            Transfer: CSU
Advisory: Completion of Hum.Dev. 1
Hours: 3 lecture
Introduction to the study of children from birth to eight years of age with special needs resulting from atypical physical/motor, cognitive, language/literacy, and social/emotional development. Covers causes and accommodation of the major types of exceptional development, including giftedness, in schools, childcare settings, homes, public and private sectors. Designed for parents, teachers, aides in infant/toddler programs, preschools and K-2 elementary school levels, and other interested students. Emphasis on communication and understanding behavioral dynamics while forming respectful relationships between families, caregivers, and specialists. Approved for continuing education units by the Board of Registered Nursing.

HUM.DEV. 21 PSYCHOLOGY OF MARRIAGE (ALSO PSYCH. 10)
Units: 3            Transfer: CSU/UC
Hours: 3 lecture
Study of the meaning and function of intimacy, marriage, and family in today's American society. Consideration given to nature of commitments, sexuality, alternative relationships, communication, conflict resolution, economics, parenting, crises, and marital separation, through the life span, and encompassing a diverse range of individuals. Recommended for majors in Human Development and Family and for those in human service careers.

HUM.DEV. 22 THE FAMILY (ALSO SOC. 4)
Units: 3            Transfer: CSU
Advisory: Completion of Soc. 1 recommended
Hours: 3 lecture
A sociological approach to the analysis of the family as a social institution. Survey of family structures of other cultures as well as an investigation into the relationship of the American family to American society. Of particular interest will be relationships of the family institution to current changes, stresses, conflicts, disorganization, etc., in the rest of American society.

HUM.DEV. 23 DYNAMICS OF PARENTHOOD (FORMERLY HUM.DEV. 23ABCD)
Units: 3            Transfer: CSU
Advisory: Completion of Hum.Dev. 1
Hours: 3 lecture
A survey of historical and contemporary attitudes toward parenting. Review of research on child-rearing practices and parent-child relationships. Exploration of current approaches for effective interaction and communication of family members. Emphasis on the influence of personality, developmental stage, family structures, ethnic and cultural factors.

HUM.DEV. 25 CULTURE AND DIVERSITY IN EARLY CHILDHOOD EDUCATION
Units: 3            Transfer: CSU
Hours: 3 lecture
Study of human diversity as it relates to early childhood education and family systems. Analysis of personal biases based on ethnicity and other differences. The process by which children learn and develop prejudice and the role of educators in this process. Explores the meaning, necessity, and benefits of anti-bias/multicultural education for children from all backgrounds and focuses on developing strategies for affirmation of diversity with children and families.

HUM.DEV. 28 INDEPENDENT STUDY
Units: 1-3            Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

HUM.DEV. 30 CREATIVE PROCESS IN CHILDREN (ALSO ART 30)
Units: 3            Transfer: CSU
Hours: 4 (2 lecture, 2 activity)
Introduction to the aesthetic development and creative expression of children. Exploration of art methods, materials, creative process, and developmental stages. Studio projects will enable students to implement age-appropriate projects for early childhood education and school-age students.

HUM.DEV. 38 ADULT SUPERVISION: MENTORING IN EARLY CHILDHOOD ED. SETTINGS
Units: 2            Transfer: CSU
Hours: 2 lecture
Principles and methods of supervising students, teachers, and other adults in early childhood education settings. Emphasis on the role of experienced teachers who function as leaders, supervisors, and mentors. Meets requirements of Master Teacher Level of Child Development Permits.
HUM.DEV. 40 ADMINISTRATION AND SUPERVISION OF EARLY CHILDHOOD PROGRAMS
Units: 3 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 1, Hum.Dev. 2, and Hum.Dev. 5, or previous experience as a director of an early childhood education program, or equivalent
Hours: 3 lecture
Basic aspects of understanding and directing an early childhood education program. Emphasis on implementing state licensing requirements for child care centers. Consideration given to planning the facilities and program, health and safety requirements, policy making, and staff/parent communication.

HUM.DEV. 41A EARLY CHILDHOOD PROGRAMS: FINANCIAL & LEGAL ISSUES
Units: 1 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 40 or previous experience as a director of an early childhood education program, or equivalent
Hours: As scheduled for a total of 18 lecture hours
Legal and financial issues related to the establishment and operation of early childhood education programs. Emphasis on compliance with relevant laws and regulations, including insurance, licensure, confidentiality, and child abuse. Ways to develop sound fiscal policies that address affordability of quality child care, equitable compensation benefits for staff, and tax provisions, relative to the operation of different types of early childhood programs.

HUM.DEV. 41B EARLY CHILDHOOD PROGRAMS: COMMUNICATION & PERSONNEL MANAGEMENT
Units: 1 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 40, or previous experience as a director of a childhood education program, or equivalent
Hours: As scheduled for a total of 18 lecture hours
Advanced level of Hum.Dev. 40 with emphasis on communication strategies and staff development. Topics to include: training, supervision and evaluation of personnel, conflict management techniques, effective communication styles and networking with others in the community to promote participation and support between professionals in the field.

HUM.DEV. 41C EARLY CHILDHOOD PROGRAMS: STAFF DEVELOPMENT & PROGRAM EVALUATION
Units: 1 Transfer: CSU
Prerequisite: Completion of Hum.Dev. 40, or previous experience as a director of an early childhood education program, or equivalent
Hours: As scheduled for a total of 18 lecture hours
Advanced level of Hum.Dev. 40 with emphasis on staff and career development. Includes goal setting, stress management, and accreditation.

HUM.DEV. 43 MUSIC AND MOVEMENT FOR YOUNG CHILDREN
Units: 3 Transfer: CSU
Hours: 3 lecture
Theoretical perspectives and practical applications of the use of music and movement with children from infancy to age eight in group settings. Emphasis on exploration of music and movement as ways to involve young children with cultural diversity and traditions, creative expression, promotion of an understanding of the connection to healthy living and physical activity, and stimulation of brain development. Methods and materials used in singing, rhythms, creative music, reading and listening, development of music and movement lesson plans, and creation of inexpensive musical instruments.

HUM.DEV. 44 INTRODUCTION TO CHILDREN’S LITERATURE (ALSO ENGLISH 44)
(FORMERLY HUM.DEV. 15)
Units: 3 Transfer: CSU
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Examination of classic and contemporary children’s literature, including criteria for selection, uses in child development and education, and practices in presentation and analysis. Designed for parents, prospective teachers, aides, child development professionals and students interested in the field of literature for children ages 1-13.

HUM.DEV. 45 INTRODUCTION TO ADOLESCENT LITERATURE (ALSO ENGLISH 45)
Units: 3 Transfer: CSU
Prerequisite: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
An examination of works which have earned merit as classics written for young adults, including discussion of literary form, the criteria for selection, practice in presentation and analysis, and aesthetic appreciation in young readers. May include representative writers such as Shakespeare, Dickens, Twain, and Tolkien as well as contemporary, multicultural writers such as Salinger, Angelou, Tan, Walker, and Wright.

HUM.DEV. 60 AGING IN A CHANGING SOCIETY
Units: 3 Transfer: CSU
Hours: 3 lecture
Introduction to the physical, cognitive, economic, social and psychological factors relating to the way people grow older, their changing roles in family and society, and the issues of contemporary aging in a diverse society. Discussion and exploration of career opportunities in the field of Gerontology.
Humanities

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: B. Abrams, A. Clarke, J. Haproff, B. Hotchkiss, J. Keating
LIAISON COUNSELORS: K. Bray, N. Martinis

The study of Humanities offers an approach which integrates the arts, literature, history, music, philosophy, and other disciplines. The program focuses on the culture of human civilization from classic antiquity through the Middle Ages and Renaissance to the Modern Era. The objective of the Humanities is to give a sense of wholeness to human experience.

HUMANITIES: GENERAL—A.A. DEGREE
The A.A. degree in Humanities: General provides preparation for upper division course work in Humanities at a four-year university. The degree will acquaint students with the relevant eras, ideas, ideals, values and terminology endemic to the field as expressed in art, music, drama, literature, philosophy, and religion. The Humanities: General A.A. degree pattern affords students the widest array of Humanities coursework from which to create their degree. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43.

REQUIRED COURSES

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<thead>
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<tr>
<td>Hum. 2 Introduction to Humanities II</td>
<td>3</td>
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<tr>
<td>Hum. 3 Introduction to Asian Humanities</td>
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PLUS 12 UNITS FROM:
Area C. Humanities, of the Associate Degree General Education
Breadth Requirements. See catalog page 42.

TOTAL UNITS REQUIRED: 21

HUMANITIES: DIVERSE PERSPECTIVES—A.A. DEGREE
The A.A. degree in Humanities: Diverse Perspectives provides preparation for upper division course work in Humanities at a four-year university. The Humanities: Diverse Perspectives A.A. degree pattern guides students through a series of courses that focus specifically on examining History, Art, Architecture, Philosophy, Drama, Literature and Music from diverse perspectives. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43.

REQUIRED COURSES

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PLUS 12 UNITS FROM THE FOLLOWING:

Art 1D Art of World Cultures .............................................. 3
Art 1E Women and Art in History ........................................ 3
Art 1F Introduction to Islamic Art ....................................... 3
English 25 African-American Literature .............................. 3
English 26 Introduction to Native American Literature .......... 3
English 27 Literature by Women ......................................... 3
History 19A History of Traditional East Asia .................... 3
History 19B History of Modern East Asia ......................... 3
Hum. 10 World Religions .................................................... 3
Hum. 15 Introduction to Mythology .................................... 3
Phil. 13 Introduction to Asian Philosophy ........................... 3
Phil. 15 Introduction to Philosophies of Self and Personhood .... 3
Phil. 27 Introduction to Philosophy of Women in World Cultures 3
Soc.Sci. 10 Introduction to Ethnic Studies ........................... 3
Soc.Sci. 13 Dialogues in American Culture ........................... 3

TOTAL UNITS REQUIRED: 21

HUMANITIES: ASIAN STUDIES—A.A. DEGREE

The A.A. degree in Humanities: Asian Studies provides preparation for upper-division course work in Humanities at a four-year university. The degree will guide students to examine the Asian experience through its ideas (philosophy), through its commitment to its culture, traditions, and rituals (religions), and through its applied practices (the disciplines for self-development of body/mind health, meditation, and martial arts). Courses are offered which provide opportunities for self-discovery and the construction of a coherent outlook and critical reason. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43.

REQUIRED CORE COURSES:

Hum. 1 Introduction to Humanities I .................................. 3
Hum. 2 Introduction to Humanities II .................................. 3
Hum. 3 Introduction to Asian Humanities ............................ 3

ADDITIONAL REQUIRED COURSES:

P.E. 55 Yoga I AND/OR ..................................................... 2
P.E. 57 Developing a Personal Yoga Practice ......................... 2
P.E. 14 Tai Chi AND/OR .................................................. 2
P.E. 66 Self Defense ......................................................... 2

PLUS 8 UNITS FROM:

Art 1F Introduction to Islamic Art ....................................... 3
History 19A History of Traditional East Asia .................... 3
History 19B History of Modern East Asia ......................... 3
Hum. 10 World Religions .................................................... 3
Japanese 1 Elementary Japanese ....................................... 4
Phil. 13 Introduction to Asian Philosophy ........................... 3
P.E. 68 Introduction to Meditation ...................................... .5-2

TOTAL UNITS REQUIRED: 21

HUMANITIES COURSES

HUM. 1 INTRODUCTION TO HUMANITIES I

Units: 3  Transfer: CSU/UC

Hours: 3 lecture
Introduction to the art, architecture, history, literature, music, and philosophy from the ancient through the medieval and early Renaissance worlds. Emphasis on classical Greece and Rome.

HUM. 2 INTRODUCTION TO HUMANITIES II

Units: 3  Transfer: CSU/UC

Hours: 3 lecture
Introduction to the art, architecture, history, literature, music, and philosophy of the Western World from the Renaissance to the present.

HUM. 3 INTRODUCTION TO ASIAN HUMANITIES

Units: 3  Transfer: CSU/UC

Hours: 3 lecture
Introduction to the art, architecture, history, literature, and philosophy of Asia with an emphasis on China and Japan from ancient times to the present. The Eastern mode of thinking emphasized and compared with those of the West.

HUM. 10 WORLD RELIGIONS

Units: 3  Transfer: CSU/UC

Hours: 3 lecture
Examination of major world religions including international faiths of Asia and the near East as well as tribal religions. Investigates rituals, ethics, institutional structures and the cultural ethos of world religions including myths, doctrines and sacred texts. Covers Confucianism, Shinto, Taoism, Hinduism, Sikhism, Buddhism, Jainism, Judaism, Zoroastrianism, Christianity and Islam.

HUM. 15 INTRODUCTION TO MYTHOLOGY

Units: 3  Transfer: CSU/UC

Hours: 3 lecture
The major elements of western mythology, its history and development as part of the human experience and its influence on art, literature and politics.

HUM. 20 INTRODUCTION TO THE OLD TESTAMENT

Units: 3  Transfer: CSU/UC

Hours: 3 lecture
Introduction to the texts and development of the Torah, Old Testament and Apocrypha through a critical reading of their writings. Includes history, cultural influences, language, authorship, events, personages/characters, ideas, and beliefs of ancient Israel as well as the relationship between Hebrew Scriptures and archaeology, literature, history, current Biblical scholarship criticism, and women's studies.
HUM. 21 INTRODUCTION TO THE NEW TESTAMENT
Units: 3  Transfer: CSU/UC
Hours: 3 lecture

HUM. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

HUM. 30 STUDYING AND LEARNING ABROAD
Units: 1  Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours
Issues of studying abroad including practical concerns of international travel, living and studying in a foreign country, awareness of cross-cultural issues, and knowledge and appreciation of host country, and re-entry issues.

HUM. 300 SELECTED TOPICS IN HUMANITIES
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Interdisciplinary courses are the cooperative product of a number of instructors (usually from different departments and disciplines) in an effort to look at a unique topic from various academic and/or experiential backgrounds.

INTERDISCIPLINARY COURSES

INT. 1 THE ENVIRONMENT AND THE HUMAN IMPACT
Units: 3  Transfer: CSU/UC
Advisory: Completion of English A or equivalent strongly recommended
Hours: 3 lecture
Designed to provide the student with theoretical and practical understanding of the principles of ecology, the complexities of technology, and the contemporary problems of the environment on both a local and global level. Lecture/discussion and films in the areas of population, technology, environmental restoration, land use, energy, pollution, and world hunger, as well as the basic concepts, economics, politics, poetry, literature, and philosophy of ecology.

INT. 5 THE CALIFORNIA LANDSCAPE: AN INTEGRATED EXPLORATION
Units: 3  Transfer: CSU/UC*
Advisory: Completion of English A or equivalent strongly recommended
Hours: 3 lecture
An interdisciplinary exploration of the diverse natural environment of California, including the geography, geology, weather and climate, flora and fauna, land use, and prehistoric evolution of the region. Considerations of the influences of California’s natural features on the history, art, literature, and environmental politics of the West. Emphasis on the Sierra Nevada and adjacent provinces of central and northern California.

INT. 6 THE SIERRA NEVADA
Units: 3  Transfer: CSU/UC*
Advisory: Completion of English A or equivalent strongly recommended
Hours: 3 lecture
Integrated study of the Sierra Nevada including its physical attributes, geological characteristics, origin and development, flora and fauna, water resources, historical and economic significance, and influences on literature, art, and culture. Includes contemporary environmental, economic, and management issues in the Sierra.
ITALIAN COURSES

ITALIAN 1 ELEMENTARY ITALIAN
Units: 4 Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Intensive instruction in understanding, speaking, reading, and writing elementary Italian. Basic grammar, regular and some irregular verbs in the present tense of the indicative mood. Daily practice in speaking and writing. Corresponds to two years of high school study.

ITALIAN 2 ELEMENTARY ITALIAN
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of Italian 1 or equivalent
Hours: 5 (4 lecture, 1 laboratory)
Intensive basic grammar, greater emphasis on speaking and writing. Emphasis on culture and events of the areas where Italian is spoken.

ITALIAN 3 INTERMEDIATE ITALIAN
Units: 4 Transfer: CSU
Prerequisite: Completion of Italian 2 or equivalent
Hours: 5 (4 lecture, 1 laboratory)
Designed for those with previous training in the Italian language. Continues to teach culture and facilitate language acquisition through listening, speaking, reading and writing. Emphasis on speaking, using more complex linguistic structures of the language, and reading and writing. Authentic Italian texts and excerpts from works of Italian authors read and analyzed in the classroom. Continued development of the ability to analyze linguistic structures and reflect on and evaluate cross-cultural differences.

ITALIAN COURSES

ITALIAN 1 ELEMENTARY ITALIAN
Units: 4 Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Intensive instruction in understanding, speaking, reading, and writing elementary Italian. Basic grammar, regular and some irregular verbs in the present tense of the indicative mood. Daily practice in speaking and writing. Corresponds to two years of high school study.

ITALIAN 2 ELEMENTARY ITALIAN
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of Italian 1 or equivalent
Hours: 5 (4 lecture, 1 laboratory)
Intensive basic grammar, greater emphasis on speaking and writing. Emphasis on culture and events of the areas where Italian is spoken.

ITALIAN 3 INTERMEDIATE ITALIAN
Units: 4 Transfer: CSU
Prerequisite: Completion of Italian 2 or equivalent
Hours: 5 (4 lecture, 1 laboratory)
Designed for those with previous training in the Italian language. Continues to teach culture and facilitate language acquisition through listening, speaking, reading and writing. Emphasis on speaking, using more complex linguistic structures of the language, and reading and writing. Authentic Italian texts and excerpts from works of Italian authors read and analyzed in the classroom. Continued development of the ability to analyze linguistic structures and reflect on and evaluate cross-cultural differences.

ITALIAN COURSES

ITALIAN 1 ELEMENTARY ITALIAN
Units: 4 Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Intensive instruction in understanding, speaking, reading, and writing elementary Italian. Basic grammar, regular and some irregular verbs in the present tense of the indicative mood. Daily practice in speaking and writing. Corresponds to two years of high school study.

ITALIAN 2 ELEMENTARY ITALIAN
Units: 4 Transfer: CSU/UC
Prerequisite: Completion of Italian 1 or equivalent
Hours: 5 (4 lecture, 1 laboratory)
Intensive basic grammar, greater emphasis on speaking and writing. Emphasis on culture and events of the areas where Italian is spoken.

ITALIAN 3 INTERMEDIATE ITALIAN
Units: 4 Transfer: CSU
Prerequisite: Completion of Italian 2 or equivalent
Hours: 5 (4 lecture, 1 laboratory)
Designed for those with previous training in the Italian language. Continues to teach culture and facilitate language acquisition through listening, speaking, reading and writing. Emphasis on speaking, using more complex linguistic structures of the language, and reading and writing. Authentic Italian texts and excerpts from works of Italian authors read and analyzed in the classroom. Continued development of the ability to analyze linguistic structures and reflect on and evaluate cross-cultural differences.
JAPANESE COURSES

JAPANESE 1 ELEMENTARY JAPANESE
Units: 4
Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Introduction to Japanese language; reading, writing, with emphasis on speaking. Pronunciation, sound system, intonation, basic vocabulary and grammar of spoken Japanese. Grammar emphasis is word order, postpositions, and some conjugation in simple sentences. Introduction to geography, customs and culture of Japan. Students required to learn Hiragana script.

JAPANESE 2 ELEMENTARY JAPANESE
Units: 4
Prerequisite: Japanese 1, or two years of high school
Transfer: CSU/UC
Hours: 5 (4 lecture, 1 laboratory)
Continuation of Japanese 1 with increased emphasis on reading, writing and grammatical forms. Stresses vocabulary, idioms, postpositions, and grammar. Study of more complex subordinate phrases and clauses. Includes Hiragana, as well as, Katakana and simple Kanji ideographs. Further study of geography, customs, and culture of Japan.

JAPANESE 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. May be taken four times for credit. See Independent Study page in catalog.

JOURNALISM

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
LIAISON COUNSELOR: V. Rogers

TRANSFER MAJOR REQUIREMENTS in Journalism are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Journalism are qualified are in writing, news reporting, public relations, and editing.

JOURNALISM COURSES

JOURN. 20A INTRODUCTION TO JOURNALISM
Units: 3
Transfer: CSU
Advisory: Eligibility for English 1A recommended
Hours: 3 lecture
Introduction to communications and mass media journalism. Designed to survey the field and offer initial experience in news gathering, reporting, and interpretation. Classroom and textbook experience is augmented by participation in campus news media.

JOURN. 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

JOURN. 95 INTERNSHIP IN JOURNALISM
Units: .5-4
Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

Law Enforcement

(SEE ADMINISTRATION OF JUSTICE)
Learning Disabilities

STUDENT SERVICES
ASSOCIATE VICE PRESIDENT: Mandy Davies
DEAN: Kaylene Hallberg
DIVISION OFFICE: Winstead Center L-110
FACULTY: T. Prouty, M. Shelley, D. Stone
AREA OFFICE: MT-8
LIAISON COUNSELORS: S. Bramlett, B. Hancock

LEARNING DISABILITIES COURSES

LRN.DIS. 610 LEARNING DISABILITIES ORIENTATION
(FORMERLY LRN.DIS. 501)
Units: .5 (Non-Degree Credit)
Hours: As scheduled for a total of 9 lecture hours
Orientation to the Learning Disabilities program and assessment of learning strengths and weaknesses to determine eligibility for learning disability services using step by step guidelines mandated by the California Community College system. (Credit/No Credit Grading)

Liberal Arts

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107

LIBERAL ARTS—A.A. DEGREE
The Liberal Arts degree is designed for transferring students. To complete this major, students complete 18 units from the current California State University General Education list (see page 49) or the University of California/California State University Intersegmental General Education Transfer Curriculum (see page 50). Courses must represent at least three different areas of the pattern selected. These courses must be in addition to those taken to fulfill Sierra College’s General Education requirements. See pages 42-43.

Library Science

LIBRARY/LEARNING RESOURCE CENTER
DEAN: Brian Haley
DIVISION OFFICE: LRC 311
FACULTY: D. Campbell, S. Davenport, S. Montgomery, P. Saulsbury, C. Sixt
AREA OFFICE: Library/Learning Resource Center—312
LIAISON COUNSELORS: C. Morris, S. Muraki
Ways of accessing information increase almost as rapidly as the amount of information available. Opportunities exist for work in academic, industrial, public and specialized libraries.

Course work in library sciences trains students to organize, process, manage and disseminate information in its varied forms. Core skills courses in the use of libraries develop a working knowledge of the Sierra College Library/Learning Resource Center and college-level library research skills in general.

LIBRARY MEDIA TECHNICIAN SKILLS CERTIFICATE
Course work in library science and the attainment of the Library/Media Technician Skills Certificate will train students to organize, process, manage and disseminate information in its varied forms. The certificate will help students prepare for entry level jobs in business, school, public, and college libraries. It will assist those currently employed in non-professional library positions to upgrade existing skills and knowledge. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lib.Sci. 10A</td>
<td>Information Literacy and Lifelong Learning</td>
<td>2</td>
</tr>
<tr>
<td>Lib.Sci. 10B</td>
<td>Library Research Process</td>
<td>2</td>
</tr>
<tr>
<td>Lib.Sci. 20</td>
<td>Technical Services—Circulation</td>
<td>3</td>
</tr>
<tr>
<td>Lib.Sci. 25</td>
<td>Technical Services—Media and Distance Learning</td>
<td>3</td>
</tr>
<tr>
<td>Lib.Sci. 30</td>
<td>Technical Services—Cataloging</td>
<td>3</td>
</tr>
<tr>
<td>Lib.Sci. 40</td>
<td>Libraries Today: Issues, Trends, Directions</td>
<td>2</td>
</tr>
<tr>
<td>Lib.Sci. 95</td>
<td>Library Internship</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 17

LIBRARY SCIENCE COURSES

LIB.SCI. 10A INFORMATION LITERACY
AND LIFELONG LEARNING

Units: 2
Transfer: CSU/UC*

Hours: As scheduled for a total of 36 lecture hours
Develops core library skills including general and specialized reference resources, classification systems, print and electronic research tools, and methods of Internet research.
LIB.SCI. 10B LIBRARY RESEARCH PROCESS
Units: 2  Transfer: CSU/UC*
Advisory: Completion of Lib.Sci. 10A or equivalent
Hours: As scheduled for a total of 36 lecture hours
Advanced library research processes utilizing print and electronic resources to conduct higher level research including Internet searches and the evaluation and comparison of resources.

LIB.SCI. 20 TECHNICAL SERVICES—CIRCULATION
Units: 3  Transfer: CSU
Hours: 3 lecture
Technical skills needed to perform circulation responsibilities using: automated circulation systems, patron interview techniques, online Interlibrary Loan and consortium services, collections maintenance, and exploration of career opportunities.

LIB.SCI. 25 TECHNICAL SERVICES—MEDIA AND DISTANCE LEARNING TECHNOLOGIES
Units: 3  Transfer: CSU
Hours: 3 lecture
Overview of media technologies and distance learning as integral components of electronic libraries. Includes terminology, definitions, delivery methods, technology, curriculum, learning styles, copyright, assessment, accessibility and student support services.

LIB.SCI. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

LIB.SCI. 30 TECHNICAL SERVICES—CATALOGING
Units: 3  Transfer: CSU
Hours: 3 lecture
The basic rules and practices of cataloging and classification of resources; including books, periodicals, audiovisuals, computer software and Internet resources. Includes both the manual and the online network systems for copy cataloging Dewey and the Library of Congress classification.

LIB.SCI. 40 LIBRARIES TODAY: ISSUES, TRENDS, DIRECTIONS
Units: 2  Transfer: CSU
Hours: 2 lecture
Overview of the library science profession exploring interconnection among the different departments of modern library: acquisitions, cataloging, circulation, reference, media and distance learning, career opportunities and future trends in the profession.

LIB.SCI. 95 LIBRARY INTERNSHIP
Units: .5-4  Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

Management
(SEE BUSINESS)

Marketing
(SEE BUSINESS)

Mathematics

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
LIAISON COUNSELORS: M. Moon, S. Muraki, P. Neal

Mathematics is a dynamic and developing field of study. It is the foundation and language of all scientific endeavor. Mathematics contributes in direct and important ways to business, finance, engineering, health, and public policy. A degree in Mathematics or Statistics provides many challenging and rewarding career opportunities. These include teaching, research in engineering fields, molecular structures, genetics and medicine, robotics, digital imagery, computer-aided design, economic forecasting, and environmental design and modeling.

TRANSFER AND MAJOR REQUIREMENTS in Mathematics are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and Counseling Center.

Assessment testing is available at the Assessment Center in the Counseling Center.

MATHEMATICS—A.A. OR A.S. DEGREE
The Mathematics major recognizes a concentration in the field of Mathematics. Successful completion of the curriculum in Mathematics and the associated electives prepare Mathematics students for transfer to four-year colleges or universities.
program in Mathematics outlined below is typical of lower-division requirements for four-year colleges and universities: some requirements vary from college to college. Students are advised to meet with a counselor before selecting courses for appropriate campus specific course requirements.

REQUIRED COURSES:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math. 30 Analytical Geometry and Calculus</td>
<td>4-5</td>
</tr>
<tr>
<td>Math. 31 Analytical Geometry and Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Math. 32 Analytical Geometry and Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Math. 33 Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

PLUS 3-4 UNITS FROM THE FOLLOWING:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.S. 12 Introduction to Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 27 Visual Basic .NET Programming I</td>
<td>3</td>
</tr>
<tr>
<td>C.S. 46 C Language Programming</td>
<td>3</td>
</tr>
<tr>
<td>Math. 10 Problem Solving</td>
<td>4</td>
</tr>
<tr>
<td>Math. 13 Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>Math. 15 Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Physics 4A Principles of Physics: Mechanics</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21-23

FOUR LEARNING FORMATS OFFERED IN ALGEBRA:  

1. The Traditional Lecture Format is offered for all algebra courses.
2. The Individualized Learning Program (ILP) offers students, particularly those who are "math anxious," a supportive environment for learning Elementary and Intermediate Algebra. In ILP, students attend lectures and receive help through tutoring or videotaped lectures. The ILP is based on mastery learning—students are given additional review and are retested when needed. Offered only on the Rocklin Campus.
3. Computer-Mediated Learning (Academic Systems) offers students a multi-media, interactive approach to all algebra courses. Self-motivated students who need a review of algebra, or who need repeated explanations of concepts, or for whom English is a second language will benefit from this format. Computer screens and accompanying audio guide students through algebra concepts, examples, and exercises. An instructor is present to provide one-on-one assistance. Quizzes are given by the computer and may be repeated; homework and exams are done with paper and pencil. Students can study topics at home using an Internet-accessible PC and can work at their own pace provided that class milestones are met. Offered only on the Rocklin Campus in both an on-campus and a hybrid on-campus/online format.
4. Web-Based Learning (ALEKS) offers students individualized math learning over the Internet using an artificial intelligence-based system. ALEKS provides assessments of a student’s math knowledge, guides them in the selection of appropriate new study material, and records their progress toward mastery of the material. As with the Computer Mediated format, an instructor is present, exams and homework are paper and pencil, a home PC may be used, and modified self-pacing is available. Offered only on the Rocklin Campus.

MATHEMATICS COURSES

*All prerequisite courses must be completed with a grade of “C” or better.
Two years of high school algebra means “Algebra I and Algebra II.”
*It is strongly recommended that students without recent math coursework complete the matriculation assessment process. Contact the Assessment Center for further information.

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>MATH. A ELEMENTARY ALGEBRA</td>
<td></td>
</tr>
<tr>
<td>Prerequisite: Completion of Math. 582 with a grade of “C” or better or placement by the matriculation assessment process</td>
<td></td>
</tr>
<tr>
<td>Hours: 4 lecture (4 units); as scheduled for a total of 90 lecture hours (5 units)</td>
<td></td>
</tr>
<tr>
<td>Real numbers and their properties, first degree equations and inequalities, graphs of linear equations in two variables, systems of linear equations in two variables, properties of integer exponents, polynomial operations, basic factoring, rational expressions, radical expressions, quadratic equations, and applied problems and problem solving.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH. B PLANE GEOMETRY</td>
<td></td>
</tr>
<tr>
<td>Prerequisite: Completion of Math. A with a grade of “C” or better, or placement by matriculation assessment process</td>
<td></td>
</tr>
<tr>
<td>Hours: 3 lecture</td>
<td></td>
</tr>
<tr>
<td>Points, lines, angles, polygons, triangles, similarity, congruence, geometric proofs, area, volume, perimeter, the circle. Equivalent to one year of high school plane geometry.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>MATH. D INTERMEDIATE ALGEBRA</td>
<td></td>
</tr>
<tr>
<td>Prerequisite: Completion of Math. A or placement by matriculation assessment process</td>
<td></td>
</tr>
<tr>
<td>Hours: 4 lecture (4 units); as scheduled for a total of 90 lecture hours (5 units)</td>
<td></td>
</tr>
<tr>
<td>Exponents, radicals, complex numbers, factoring, linear and quadratic equations and inequalities; linear, quadratic, exponential and logarithmic functions; graphing, and systems of equations.</td>
<td></td>
</tr>
</tbody>
</table>
MATH. 8 TRIGONOMETRY
Units: 4
Prerequisite: Completion of Math. A, B, and D with grades of “C” or better, or placement by matriculation assessment process
Hours: 4 lecture
Covers the fundamentals of trigonometry. Topics include review of algebraic functions, definitions of trigonometric and circular functions, graphs, identities and applications. Other material includes solving trigonometric equations, solving triangles using the Laws of Sines and Cosines, vectors, polar coordinates and graphs, polar representations of complex numbers and conic sections. (CAN MATH 8)

MATH. 10 PROBLEM SOLVING
Units: 4
Prerequisite: Two years of high school algebra or Math. D or equivalent with a grade of “C” or better, or placement by matriculation assessment process
Hours: 4 lecture
Individual and small-group problem solving geared toward real life situations and nontraditional problems. Problem solving strategies include: draw a diagram, eliminate possibilities, make a systematic list, look for a pattern, guess and check, solve an easier related problem, subproblems, use manipulatives, work backward, act it out, unit analysis, use algebra, finite differences, and many others. Divergent thinking and technical communication skills of writing and oral presentation will be enhanced.

MATH. 12 COLLEGE ALGEBRA
Units: 4
Prerequisite: Completion of Math. D with a grade of “C” or better, or placement by matriculation assessment process
Hours: 4 lecture
Study of algebra topics beyond Math D; including functions, graphs, logarithms, systems of equations, matrices, analytic geometry sequences, mathematical induction, and introduction to counting techniques. (CAN MATH 10)

MATH. 13 ELEMENTARY STATISTICS
Units: 4
Prerequisite: Two years of high school algebra or Math. D or equivalent with a grade of “C” or better, or placement by matriculation assessment process
Hours: 4 lecture
Introductory course in probability and statistics, including descriptive statistics, techniques and principles of counting, probability, inferential statistics; and use of statistical computer software or statistical graphics calculator. Specific calculator required for course will be purchased by students. (CAN STAT 2)

MATH. 15 DISCRETE MATHEMATICS
Units: 3
Prerequisite: Two years of high school algebra or Math. D or equivalent with a grade of “C” or better, or placement by matriculation assessment process
Hours: 3 lecture
Introduction to sets and functions; study of logic; principles of counting and probability; study of matrix algebra; and introduction to relations, graph theory, and tables. Discussion of mathematical proof, including proof by induction.

MATH. 16A CALCULUS FOR SOCIAL AND LIFE SCIENCES
Units: 4
Prerequisite: Three years of high school mathematics which includes two years of algebra & placement by the matriculation assessment process; or Math 12 with a grade of “C” or better
Advisory: Not open to students with a grade of “C” or better in Math. 30 or equivalent
Hours: 4 lecture
Review of functions, limits, differentiation and integration of algebraic functions, calculus for exponential and logarithmic functions, applications of calculus in social and life sciences. This course is not intended for students majoring in mathematics, engineering, physics, or chemistry. (CAN MATH 30) (With Math. 16B, CAN MATH SEQ D)

MATH. 16B CALCULUS FOR SOCIAL AND LIFE SCIENCES
Units: 4
Prerequisite: Completion of Math. 16A or Math. 30 or equivalent with a grade of “C” or better
Advisory: Trigonometry (Math. 8) is recommended. Not open to students with a grade of “C” or better in Math. 31 or equivalent
Hours: 4 lecture
Differentiation and integration of trigonometric functions, functions of several variables, partial derivatives, double integrals, introduction to differential equations, sequences and series, applications of calculus in business and the social and life sciences. (CAN MATH 32) (With Math 16A, CAN MATH SEQ D)

MATH. 17 CONCEPTS OF MATHEMATICS
Units: 3
Prerequisite: Two years of high school algebra and one year of geometry or Math. A, B, and D or equivalent with grades of “C” or better, or placement by matriculation assessment process
Hours: 3 lecture
Math topics which allow students to explore mathematical patterns and relations, formulate conjectures based on their explorations, and learn how to prove (or disprove) their conjectures. Included will be different problem solving techniques, number theory, operations with sets, sequences and series, and geometry. Course intended for Liberal Studies transfers to California State University, Sacramento.
MATH. 18 THE NATURE OF MATHEMATICS  
Units: 3  Transfer: CSU/UC  
Prerequisite: Completion of Math. D or equivalent with a grade of “C” or better, or placement by matriculation assessment process  
Hours: 3 lecture  
Introduces students to the art and application of mathematics in the world around them. Topics include mathematical modeling, voting and apportionment, and mathematical reasoning with applications chosen from a variety of disciplines. Not recommended for students entering elementary school teaching or business.

MATH. 20 FINITE MATH  
Units: 3  Transfer: CSU/UC  
Prerequisite: Completion of Math D with grade of “C” or better, or placement by matriculation assessment process  
Hours: 3 lecture  
Review of functions; systems of equations; mathematics of finance; matrices and their applications; linear programming; introduction to probability and statistics; Markov Chains; and decision making. (CAN MATH 12)

MATH. 28 INDEPENDENT STUDY  
Units: 1-3  Transfer: CSU/UC  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

MATH. 29 PRE-CALCULUS MATHEMATICS  
Units: 4  Transfer: CSU/UC  
Prerequisite: Completion of Math 8 with grade of “C” or better, or placement by matriculation assessment process  
Hours: 4 lecture  
Preparation for calculus. Study of polynomials, rational functions, exponential and logarithmic functions, trigonometric functions, systems of linear equations, matrices, determinants, rectangular and polar coordinates, conic sections, complex number systems, mathematical induction, binomial theorem, and sequences. Recommended for students who plan to take Math. 30. (CAN MATH 16)

MATH. 30 ANALYTICAL GEOMETRY AND CALCULUS  
Units: 4-5  Transfer: CSU/UC  
Prerequisite: Completion of Math. 8 and either Math. 12 or Math. 29 or equivalent high school classes with grades of “C” or better, or placement by matriculation assessment process  
Hours: 4 lecture (4 unit); 5 lecture (5 unit)  
Introduction to analytic geometry, limits, continuity, differentiation and integration of algebraic, trigonometric, and transcendental functions, as well as many application problems; a limited number of problems will be solved utilizing appropriate computer software. No programming knowledge is required. The 5-unit option includes instruction on the use of math power tool(s). Specific graphics calculator required for course will be indicated in class schedule and purchased by student. (CAN MATH 18) (With Math 31, CAN MATH SEQ.B) (With Math 31 & 32, CAN MATH SEQ.C)

MATH. 31 ANALYTICAL GEOMETRY AND CALCULUS  
Units: 4  Transfer: CSU/UC  
Prerequisite: Completion of Math. 30 or equivalent with a grade of “C” or better  
Hours: 4 lecture  
Continuation of Math. 30. Applications of the definite integral; calculus of transcendental functions and techniques of integration, finite series, plane curves, polar coordinates, and conic sections. (CAN MATH 20) (With Math 30, CAN MATH SEQ.B) (With Math 30 & 32, CAN MATH SEQ.C)

MATH. 32 ANALYTICAL GEOMETRY AND CALCULUS  
Units: 4  Transfer: CSU/UC  
Prerequisite: Completion of Math. 31 or equivalent with a grade of “C” or better  
Hours: 4 lecture  
Continuation of Math. 31. Vectors and analytic geometry in the plane and space; functions of several variables; partial differentiation, multiple integrals, and application problems; vector functions and their derivatives; motion in space; and surface and line integrals, Stokes’ and Green’s Theorems, and the Divergence Theorem. (CAN MATH 22) (with Math 30 & 31, CAN MATH SEQ.C)

MATH. 33 DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA  
Units: 6  Transfer: CSU/UC  
Prerequisite: Completion of Math. 31 or equivalent with a grade of “C” or better  
Advisory: Math. 32 recommended  
Hours: 6 lecture  
First and second order ordinary differential equations, linear differential equations, numerical methods and series solutions, Laplace transforms, modeling and stability theory, systems or linear equations, matrices, determinants, vector spaces, linear transformations, orthogonality, eigenvalues and eigenvectors. (CAN MATH 24)
MATH. 42 BUSINESS CALCULUS
Units: 4 Transfer: CSU/UC*
Prerequisite: Completion of Math D with grade of "C" or better, or placement by matriculation assessment process
Advisory: Completion of Math 12 strongly recommended, especially for students who have not recently taken Math. D
Hours: 4 lecture
Introduction to differential and integral calculus, with particular emphasis on applications in the fields of business, economics, and social sciences. Includes: concepts of a function, limits, derivatives, integrals of polynomial, exponential and logarithmic functions, optimization problems, and calculus of functions of more than one variable. Not open to those with credit for Math. 30. (CAN MATH 34)

MATH. 300 SELECTED TOPICS IN MATHEMATICS
Units: .5-4 Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

MATH. 581 ARITHMETIC REVIEW (FORMERLY SKL.DEV. 581)
Units: 4 (Non-Degree Credit)
Advisory: Placement by matriculation assessment process
Hours: 6 (3 lecture, 3 laboratory)
Basic review of fundamental arithmetic operations with whole numbers, decimals, fractions, ratio and proportion, and percentages.

MATH. 582 PRE-ALGEBRA (FORMERLY SKL.DEV. 582)
Units: 4 (Non-Degree Credit)
Prerequisite: Completion of Math 581 with a grade of "C" or better or placement by matriculation assessment process
Hours: 6 (3 lecture, 3 laboratory)
Integrates and utilizes algebraic concepts and skills, such as integers, algebraic equations, polynomials, radicals, factoring and graphing, as well as reviews whole numbers, decimals, fractions, ratio and proportions, exponential notation, percentages, basic geometry and problem solving.

Music
LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: F. Weber
LIAISON COUNSELORS: K. Bray, V. Rogers

The Music department’s main concern is to develop a keen appreciation of all periods of music, involve the individual in the performing arts, and enhance the potential ability of each person to reach the highest plane of musical understanding and excellence. The music curriculum has been outlined to provide an enjoyable experience in music as an avocation and as a training period for the continuing music major and the professional musician.

TRANSFER MAJOR REQUIREMENTS in Music are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Music are qualified are in elementary school, high school, community college, or university teaching, professional musician, and private teaching.

MUSIC—A.A. OR A.S. DEGREE
Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 3A Ear Training I</td>
<td>2</td>
</tr>
<tr>
<td>Music 3B Ear Training II</td>
<td>2</td>
</tr>
<tr>
<td>Music 6A Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>Music 6B Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>Music 9A Music Theory III</td>
<td>3</td>
</tr>
<tr>
<td>Music 12A Survey of Music History and Literature to 1750</td>
<td>3</td>
</tr>
<tr>
<td>Music 12B Survey of Music History and Literature from 1750 to Present</td>
<td>3</td>
</tr>
<tr>
<td>Music 40C Piano OR</td>
<td></td>
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<tr>
<td>Music 40D Piano OR</td>
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<tr>
<td>Music 40E Piano OR</td>
<td></td>
</tr>
<tr>
<td>Music 40F Piano</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21

Metals and Manufacturing Technology
(SEE WELDING TECHNOLOGY)

Microbiology
(SEE BIOLOGICAL SCIENCES)
MUSIC COURSES

MUSIC 2 MUSIC APPRECIATION  
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Foundation course recommended for all students seeking a basis for the understanding and enjoyment of music. Discussion of music elements, orchestral instruments, vocabulary, and historical styles and periods will be discussed using the time-proven masterworks.

MUSIC 3A EAR TRAINING I  
Units: 2  Transfer: CSU/UC*
Prerequisite: Completion of Music 10 or equivalent knowledge of musical notation
Advisory: Completion of Music 40A or equivalent piano skill
Hours: 3 (1 lecture, 2 activity)
Develops skills used for musical dictation of rhythms, intervals, chords and melodies; plus sight singing of short, simple diatonic melodies.

MUSIC 3B EAR TRAINING II  
Units: 2  Transfer: CSU/UC*
Prerequisite: Completion of Music 3A or passing score on examination
Advisory: Completion of Music 40A or equivalent piano skill
Hours: 3 (1 lecture, 2 activity)
Continuation of Music 3A through continued study of the aspects of aural recognition and sight singing. Two-part dictation, recognition of augmented and diminished triads and seventh chords.

MUSIC 4A ADVANCED EAR TRAINING I  
Units: 2  Transfer: CSU/UC*
Prerequisite: Completion of Music 3B, or passing score on examination
Advisory: Completion of Music 40B or equivalent piano skill
Hours: 3 (1 lecture, 2 activity)

MUSIC 4B ADVANCED EAR TRAINING II  
Units: 2  Transfer: CSU/UC*
Prerequisite: Completion of Music 4A or passing score on examination
Advisory: Completion of Music 40B or equivalent piano skill
Hours: 3 (1 lecture, 2 activity)
Advanced sight singing, melodic dictation, harmonic dictation, chord recognition. Introduces listening to and understanding atonal music.

MUSIC 6A MUSIC THEORY I  
Units: 3  Transfer: CSU/UC*
Prerequisite: Completion of Music 10 or equivalent knowledge of music notation
Corequisite: Concurrent enrollment in Music 3A
Advisory: Completion of Music 40A or equivalent piano skill
Hours: 3 lecture
Incorporates the following concepts: music notation, tonality, intervals, transposition, chords construction, non-chord tones, writing melody, music textures.

MUSIC 6B MUSIC THEORY II  
Units: 3  Transfer: CSU/UC*
Prerequisite: Completion of Music 6A or passing score on examination
Corequisite: Concurrent enrollment in Music 3B
Advisory: Completion of Music 40B or equivalent piano playing skill
Hours: 3 lecture
Incorporates the concepts from Music 6A. In addition, through writing and analysis, includes secondary dominants, modulation, binary and ternary forms. Diminished seventh and non-dominant chords will be addressed. Concurrent laboratory experience in ear training and sight singing includes melodic, harmonic, and rhythmic dictation.

MUSIC 7 INTRODUCTION TO MIDI (MUSICAL INSTRUMENT DIGITAL INTERFACE)  
Units: 3  Transfer: CSU
Advisory: Completion of Music 10 or 40A or equivalent keyboard skills and ability to read music notation
Hours: 3 lecture
Introduction to synthesizers, sequencing and computer generated music notation. Covers signal flow, assigning sounds to tracks, editing and mixing sequences, and notating music on the computer.

MUSIC 9A MUSIC THEORY III  
Units: 3  Transfer: CSU/UC
Prerequisite: Completion of Music 6B or passing score on examination
Corequisite: Concurrent enrollment in Music 4A
Advisory: Completion of Music 40C or equivalent piano skills
Hours: 3 lecture
Incorporates concepts from Music 6B. In addition, through writing and analysis, includes chromatic harmonies, altered chords, remote modulations, introductory rhythmic counterpoint, 18th century polyphony, inventions and fugues, variation techniques, sonata and rondo forms.
MUSIC 9B MUSIC THEORY IV  
Units: 3  
Prerequisite: Completion of Music 9A or passing score on examination  
Hours: 3 lecture  
Introduces post-romantic, twentieth century and current techniques including extended and chromatic harmonies, foreign modulations, nonfunctional harmonies, atonality, twelve-tone technique, set theory, use of electronic resources and current trends.

MUSIC 10 MUSIC FUNDAMENTALS  
Units: 3  
Hours: 3 lecture  
An elementary course designed to provide the basic musical skills, knowledge, and competencies necessary for reading or listening to music. Covers elements of music, scales, notation, rhythm, and sight reading. Note: Not open to students who are taking or have successfully completed Music 3A-3B or Music 6A-6B.

MUSIC 11 INTRODUCTION AND HISTORY OF JAZZ  
Units: 3  
Hours: 3 lecture  
Introduction to the history of jazz from traditional European, African and Latin origins to various contemporary and fusion styles. Contributions of great jazz artists will be studied. Focus is placed on developing critical skills applicable to listening to jazz arrangements and improvisation.

MUSIC 12A SURVEY OF MUSIC HISTORY AND LITERATURE TO 1750  
Units: 3  
Hours: 3 lecture  
Study of the history of Western art music from antiquity through the Baroque Era including the influences of the Catholic Church, contributions of various personalities and cultures with selected readings, recordings, and score study.

MUSIC 12B SURVEY OF MUSIC HISTORY AND LITERATURE FROM 1750 TO PRESENT  
Units: 3  
Hours: 3 lecture  
Study of the history of Western art music from the end of the Baroque era to the present, including contributions of other cultures with selected readings and recordings.

MUSIC 14 INTRODUCTION TO COMMERCIAL MUSIC PRODUCTION  
Units: 3  
Advisory: Completion of C.I.E. 10 or equivalent  
Hours: 4 (3 lecture, 1 laboratory)  
Emphasis on audio concepts including basic and essential audio theory, development of critical listening skills, and perception of audio in the form of acoustic and electrical energy. Discussion and exercises in signal flow, recording facility configuration, sound reinforcement system set-up and working within different acoustic environments. Introductory training in equipment selection and placement as well as basic tracking techniques will be offered.

MUSIC 15 AUDIO RECORDING  
Units: 3  
Prerequisite: Successful completion of Music 14 or equivalent  
Advisory: Completion of C.I.E. 10 recommended  
Hours: 4 (3 lecture, 1 laboratory)  
Studio production techniques with added training on close miking of individual instruments. Coverage of analogue and digital multitrack recording techniques. Increased opportunity for practical implementation of signal processing techniques and use of related equipment such as multi FX and dynamics processors. Small group multitrack projects will be required.

MUSIC 20 MUSIC FOR CHILDREN (ALSO HUM.DEV. 16)  
Units: 3  
Hours: 3 lecture  
Principles of teaching and using music in preschool, elementary school, and recreational programs. Problems, methods, and materials in singing, rhythms, creative music, reading, and listening. Recommended for those who use music with groups of children.

MUSIC 28 INDEPENDENT STUDY  
Units: 1-3  
Hours: 3 lecture  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special composition projects, performances, and research projects. May be taken four times for credit. See Independent Study page in catalog.

MUSIC 37 CHAMBER MUSIC ENSEMBLES  
Units: 1.5  
Prerequisite: Completion of Music 6A or equivalent  
Hours: 2 (1 lecture, 1 laboratory)  
A workshop course designed for the advanced musician who desires practical experience in performing classical and contemporary music. Particular emphasis on technique, tone production, phrasing, and musicianship. May be taken four times for credit.
MUSIC 39 VOICE
Units: 2 Transfer: CSU/UC
Prerequisite: A basic ability for reading musical notations
Hours: 3 (1 lecture, 2 laboratory)
Emphasis on the development of one’s voice. Solos are learned and performed in class. Oriented for students interested in the pursuit of artistic singing through “serious” music. May be taken four times for credit.

MUSIC 40A PIANO
Units: 2 Transfer: CSU/UC
Hours: 3 (1 lecture, 2 laboratory)
Beginning instruction in the fundamentals of playing piano. Note reading and basic playing techniques. Designed to develop musicianship and facility. NOTE: Students may take a maximum of 8 units from the Music 40A-40F (Piano) series.

MUSIC 40B PIANO
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Music 40A or equivalent piano skill
Hours: 3 (1 lecture, 2 laboratory)
Continuation of Music 40A using more advanced materials. Introduction of how to harmonize a melody, playing scales and chord inversions. NOTE: Students may take a maximum of 8 units of the Music 40A-40F (Piano) series.

MUSIC 40C PIANO
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Music 40B or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Instruction in keyboard technique. Continuation of Music 40B, with music drawn from intermediate grades. Individual needs and interests considered. NOTE: Students may take a maximum of 8 units of the Music 40A-40F (Piano) series.

MUSIC 40D PIANO
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Music 40C or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Instruction in keyboard technique. Continuation of Music 40C, with music drawn from the more advanced grades. Individual needs and interests considered. NOTE: Students may take a maximum of 8 units of the Music 40A-40F (Piano) series.

MUSIC 40E PIANO
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Music 40D or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Instruction in keyboard technique. Continuation of Music 40D, with music drawn from the more advanced grades. Individual needs and interests considered. NOTE: Students may take a maximum of 8 units of the Music 40A-40F (Piano) series.

MUSIC 40F PIANO
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Music 40E or equivalent
Hours: 3 (1 lecture, 2 laboratory)
More advanced instruction in keyboard technique. Continuation of Music 40E, with music drawn from the more advanced grades. Individual needs and interests are considered. NOTE: Students may take a maximum of 8 units of the Music 40A-40F (Piano) series.

MUSIC 42 CHAMBER SINGERS
Units: 2 Transfer: CSU/UC
Prerequisite: Admission by audition including sightsinging & aural skills assessment
Hours: 3 (2 lecture, 1 laboratory)
Explores the literature and performance practices for small vocal ensembles from the Renaissance to the present. Public performances, festivals, and field trips required. May be taken four times for credit.

MUSIC 43 MEN’S CHORUS
Units: 2
Prerequisite: Admission by audition including sightsinging & aural skills assessment
Hours: 3 (2 lecture, 1 laboratory)
Explores the literature and performance practices of male vocal ensembles from the Renaissance to the present. Public performances, festivals, and field trips required. May be taken four times for credit.

MUSIC 44 WOMEN’S CHORUS
Units: 2
Prerequisite: Admission by audition including sightsinging & aural skills assessment
Hours: 3 (2 lecture, 1 laboratory)
Explores the literature and performance practices of female vocal ensembles from the Renaissance to the present. Public performances, festivals, and field trips required. May be taken four times for credit.

MUSIC 46 JAZZ ENSEMBLE
Units: 2 Transfer: CSU/UC
Prerequisite: Three to four years experience on instrument or equivalent
Hours: 3 (1 lecture, 2 laboratory)
A workshop in the problems of jazz ensemble. Practical experience in playing jazz ensemble charts. Consideration of the vocational possibilities in the field; study of improvisation. Each repeat includes an increased facility above previous level. May be taken four times for credit.
MUSIC 47 VOCAL JAZZ ENSEMBLE
Units: 2  Transfer: CSU/UC
Prerequisite: Previous choral experience or equivalent
Hours: 3 (1 lecture, 2 laboratory activity)
Study and performance of modern and vocal jazz styles, tone production, and rhythms. Public performances and field trips required. May be taken four times for credit.

MUSIC 48 CONCERT CHOIR
Units: 2  Transfer: CSU/UC
Prerequisite: By audition only; ability to match pitches
Hours: 3 (1 lecture, 2 laboratory)
A variety of choral experience performing repertoire, both sacred and secular, from the medieval, baroque, classical, romantic and modern periods of music history. Focuses on performance practice, musical style and poetic interpretation. May be taken four times for credit.

MUSIC 49 JAZZ IMPROVISATION AND PERFORMANCE PRACTICE
Units: 2  Transfer: CSU/UC
Prerequisite: Three to four years experience on instrument or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Fundamentals of jazz improvisation, including chord-scale application. Analysis of diverse styles of the great jazz artists through recordings and transcriptions. Development of a unique improvisational style as applied to performance. May be taken four times for credit.

MUSIC 50 WIND ENSEMBLE
Units: 2  Transfer: CSU/UC
Prerequisite: Three to four years experience on instrument or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Training in the interpretation and performance of standard band literature, with emphasis on sight reading new band music. Advanced students given the opportunity for solo work. At least one public performance given each semester. May be taken four times for credit.

MUSIC 51A APPLIED MUSIC I
Units: 1-2  Transfer: CSU/UC
Prerequisite: Three to four years experience on instrument or equivalent
Hours: 3 laboratory per unit
Individualized study of departmentally approved classical performance curriculum, evaluated through a juried performance and including a departmental recital.

MUSIC 51B APPLIED MUSIC II
Units: 1-2  Transfer: CSU/UC
Advisory: Completion of Music 51A or equivalent recommended
Hours: 3 laboratory per unit
Individualized study of departmentally approved classical performance curriculum, evaluated through a juried performance and including a departmental recital.

MUSIC 51C APPLIED MUSIC III
Units: 1-2  Transfer: CSU/UC
Advisory: Completion of Music 51B or equivalent recommended
Hours: 3 laboratory per unit
Individualized study of departmentally approved classical performance curriculum, evaluated through a juried performance and including a departmental recital.

MUSIC 51D APPLIED MUSIC IV
Units: 1-2  Transfer: CSU/UC
Advisory: Completion of Music 51C or equivalent recommended
Hours: 3 laboratory per unit
Individualized study of departmentally approved classical performance curriculum, evaluated through a juried performance and including a departmental recital.

MUSIC 52 CHAMBER ORCHESTRA
Units: 2  Transfer: CSU/UC
Prerequisite: Three to four years experience on instrument or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Training in the interpretation and performance of standard orchestral literature, with emphasis on sight reading. Advanced students given the opportunity for solo work. At least one public performance each semester. May be taken four times for credit.

MUSIC 54 SYMPHONIC BAND
Units: 2  Transfer: CSU/UC
Prerequisite: One to four years experience on instrument or equivalent
Hours: 3 (1 lecture, 2 laboratory)
Training in the interpretation and performance of standard band literature, with emphasis on sight reading new band music. Advanced students given the opportunity for solo work. At least one public performance each semester. May be taken four times for credit.

MUSIC 56 COMMERCIAL REPERTOIRE FOR THE PROFESSIONAL MUSICIAN
(Inactive 3-12-02)
MUSIC 57A BEGINNING GUITAR  
Units: 1.5  Transfer: CSU/UC  
Hours: 2 (1 lecture, 1 laboratory)  
Learning fundamentals of the guitar: components of instrument, reading music notations, key structure and chord structure (open position), and finger picking. Students required to supply own instruments.

MUSIC 57B BEGINNING GUITAR  
Units: 1.5  Transfer: CSU/UC  
Prerequisite: Completion of Music 57A or equivalent  
Hours: 2 (1 lecture, 1 laboratory)  
Further study of guitar fundamentals, including advanced finger picking and strumming techniques; two and three part note reading; and expanded notation and rhythmic development. Students required to supply own instruments.

MUSIC 58A INTERMEDIATE GUITAR  
Units: 1.5  Transfer: CSU/UC  
Prerequisite: Completion of Music 57B or equivalent  
Hours: 2 (1 lecture, 1 laboratory)  
Learning chromatics, chord structure in closed positions, keyboard harmony as applied to songs, and major and minor scales. These techniques applied to songs in group performance. Students required to supply own instruments.

MUSIC 58B INTERMEDIATE GUITAR  
Units: 1.5  Transfer: CSU/UC  
Prerequisite: Completion of Music 58A or equivalent  
Hours: 2 (1 lecture, 1 laboratory)  
Further study of chord melody construction. Learning moveable chords and application to song types, including 9th, 11th, and 13th chords. Students required to supply own instrument.

MUSIC 60 SPECIAL TOPICS: MUSIC  
SURVEY AND PERFORMANCE  
Units: .5-4  Transfer: CSU/UC*  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

MUSIC 600 REPERTOIRE OF MUSICAL THEATRE  
Units: 2 (Non-Degree Credit)  
Prerequisite: Admission by audition including sight singing and aural skills assessment  
Hours: 3 (1 lecture, 2 activity)  
A variety of Broadway Musical repertoire ranging from solo and ensemble music from early musicals to contemporary works. Some sacred as well as secular music will be studied and prepared for public performances. May be taken four times for credit. (Credit/No Credit Grading)
Natural Resources

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: M. Macfarlane
LIAISON COUNSELOR: B. Ruud

The Natural Resources program exposes students to general principles, contemporary issues and field applications affecting the management of the Nation’s natural resources and provides a general education in environmental conservation and natural resource management. California faces numerous and mounting challenges to its diverse resource base; as a result there is an increasing need for individuals trained in forestry, environmental conservation and park and watershed management. The career outlook in these fields is bright as California’s population increases the need to address issues such as forest management and protection, land use, pollution, wildfire and floods, urban sprawl and population growth. Students who complete the program have a variety of employment options, including park ranger/technician, ecologist, recreation program coordinator, watershed education coordinator, conservation technician, forester/technician, natural resource management technician, and environmental technician.

NATURAL RESOURCES COURSES

NAT.RES. 10 CONSERVATION OF NATURAL RESOURCES
Units: 3 Transfer: CSU/UC
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 3 lecture
Use and protection of natural resources, including soil, water, forest, mineral, plant, and animal life, with particular attention to California conditions. Ecological principles, history of the conservation movement, modern problems in resource use, and the citizen’s role in conservation.

NAT.RES. 25 WILDLAND TREES & SHRUBS (DENDROLOGY) (FORMERLY FORESTRY 16)
Units: 4 Transfer: CSU
Advisory: Eligibility for English 1A or E.S.L. 40W
Hours: 6 (3 lecture, 3 laboratory)
Botanical characteristics, taxonomy, physiology, and community relationships of the major trees and shrubs in the Western United States. Discussion of commercial uses and geographic ranges of these plants. Identifying specimens under field conditions and using herbarium specimens.

NAT.RES. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level. Independent study might include, but is not limited to, research papers, special subject area projects and research projects. May be taken four times for credit. See Independent Study page in catalog.

NAT.RES. 95 INTERNSHIP IN NATURAL RESOURCES
Units: .5-4 Transfer: CSU*
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships.
Designed for advanced students who are performing work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of the supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

NAT.RES. 300 SELECTED TOPICS IN NATURAL RESOURCES
Units: .5-4 Transfer: CS
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Natural Science

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4

NATURAL SCIENCE—A.A. OR A.S. DEGREE
The Natural Science degree is designed for students who are pursuing transfer majors in the Natural Sciences, including Astronomy, Biological Science, Chemistry, Geography, Geology, Physics, and related disciplines. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. Courses used to satisfy this major may not be used to satisfy General Education Requirements.

REQUIRED COURSES
(18 UNITS FROM THE FOLLOWING):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>Ag 198</td>
<td>Food, Society &amp; the Environment</td>
<td>3</td>
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<tr>
<td>Ag 211</td>
<td>Anatomy and Physiology of Domestic Animals</td>
<td>4</td>
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<tr>
<td>Ag 221</td>
<td>Introduction to Soil Science</td>
<td>3</td>
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<td>Anthro. 1</td>
<td>Physical Anthropology</td>
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<td>Anthro. 1L</td>
<td>Physical Anthropology Laboratory</td>
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</tbody>
</table>
Students completing the Registered Nursing Program earn an A.S. or A.A. Degree in Registered Nursing. Students completing the Vocational Nursing Program, by meeting the additional degree requirements, may earn an A.S. or A.A. Degree in Vocational Nursing. Students interested in taking nursing courses are advised to obtain the information/application sheets from the Nursing or Counseling Department. In order to receive complete and accurate information concerning the nursing programs, students are urged to first read the information sheets carefully, and then seek further information or clarification from the nursing department or counseling staff as necessary.

Baccalaureate and graduate nursing programs in four-year colleges and universities differ widely in transfer and credit-granting policies, requirements, and course offerings. Students planning on seeking advanced degrees in nursing should obtain appropriate college catalogs.
Nursing Assistant

The Nursing Assistant courses are designed to prepare students for employment in home health or long term care facilities. There are no degree patterns or transfer majors in this area. Students desiring eligibility for certification must maintain grades of “C” or better in Nursing Assistant courses. A minor physical exam and proof of freedom from communicable diseases by immunization and/or serological testing is required (at the student’s expense) prior to the patient care experience as mandated by the state.

Drug testing and background screening are required. Students must be fingerprinted and submit a Declaration of Conviction/No Conviction form for the Department of Health Services prior to entrance to clinical facility.

Students must obtain an approved uniform and required patient care equipment, obtain BLS-C certification, and be responsible for transportation to and from clinical facilities.

NURSING ASSISTANT COURSES

N.A. 2 HOME HEALTH AIDE
Units: 1.5
Prerequisite: Satisfactory completion of N.A. 3 or current Nursing Assistant Certification issued by California Department of Health Services
Hours: As scheduled for a total of 42 hours (20 lecture, 22 laboratory)

Nursing care in the home, to include home care of the sick and handicapped; patient accident prevention; personal care services adapted to a home environment; cleaning and care tasks in the home; nutrition; and food purchasing and preparation. Upon successful completion, student will be eligible to receive a Home Health Aide Certificate from the California Department of Health Services and be qualified for employment through a home health agency. (Letter Grade Only)

N.A. 3 FUNDAMENTALS OF NURSING
Units: 5.5
Prerequisite: Completion of English 50 and English A or placement by approved score on assessment test; or completion of E.S.L. 20L, 20R, and 20W or placement by ESL matriculation assessment process
Hours: 10.5 (3 lecture, 7.5 laboratory) (lecture and laboratory hours subject to California Department of Health Services regulations)

Introduction to nursing practice based on the humanistic philosophy of Abraham Maslow. Includes basic skills necessary to assist in satisfying the patient’s physical, psychological, social, and cultural needs. Upon completion, student will be eligible to take the State of California Certification Examination to become a Nursing Assistant qualified for employment in an acute or long-term health care facility. Testing and certification fees are required. (Letter Grade Only)

N.A. 4 ACUTE CARE NURSING ASSISTANT
Units: 3
Advisory: Completion of N.A. 3 or equivalent
Hours: 4.6 (2.2 lecture, 2.4 laboratory)
The roles and responsibilities of the nursing assistant in the acute care hospital including professionalism, ethics, and confidentiality.

Nursing, Vocational

The program is designed for three consecutive semesters, after completion of the prerequisites, summer session excluded. Students must be admitted to the Vocational Nursing Program before enrolling in Vocational Nursing courses. Students will be in class approximately 20-30 hours per week, with time divided between lecture and clinical practice in local hospitals and other community health agencies. Some clinical practice evenings, nights, and weekends may be assigned. At the expense of the student, a minor physical exam and proof of freedom from communicable disease and/or immunizations for the protection of the student and patients are required upon admission and prior to the first day of class. Students must also purchase an approved uniform and instructional materials required to achieve program success, maintain BLS-C certification, and be responsible for transportation to and from clinical facilities. Drug testing and background screening are required.

A.A. and A.S. degrees as well as certificates may be earned in Vocational Nursing. Vocational Nursing classes may not be taken on a credit/no credit basis. Grades of “C” or better are required in all courses listed for the degree or certificate. Obtain information/application packets from Area Office in room 101 at Roseville Gateway or from Counseling Offices at the Rocklin or Nevada County Campuses.

VOCATIONAL NURSING—A.A. OR A.S. DEGREE OR CERTIFICATE

The Certificate of Completion in Vocational Nursing qualifies students to write the National Council of State Boards of Nursing Licensure Examination (NCLEX-PN). Licensed Vocational Nurses qualify for employment in all classifications of health care facilities or offices where the duties performed are under the direction of a licensed physician or registered nurse. When applying for state examination and licensure, the student must be fingerprinted and submit documentation related to any received conviction; licensure may be denied.

Completion of the required curriculum and fulfillment of the General Education requirements are necessary for an A.A./A.S. degree.

REQUIRED COURSES

\*Bio.Sci. 5 Human Anatomy** OR
\*Bio.Sci. 7A and 7B** Principles of Human Anatomy AND
\*Bio.Sci. 6 Human Physiology** OR
\*Bio.Sci. 55 Human Anatomy & Physiology**................. 4-9
*N.A. 3 Fundamentals of Nursing ............................... 0-5.5
*Nut./Fd. 10 Nutrition** ................................. 3
*Hum.Dev. 1 Human Development OR
*Hum.Dev. 1A,1B, and 1C Human Development ............... 3
*Psych. 1 Introduction to Psychology ......................... 3
N.V. 2 Basic Human Needs & the Nursing Process ............ 11.5-12
N.V. 4 Common Alterations in Basic Human Needs .......... 12
+ N.V. 6 Complex Alterations in Basic Human Needs .......... 12
*Prerequisites required must be completed with grades of “C” or better before entry into the program. N.A. 3 is waived for currently employed certified nursing assistants.
**Courses must be completed within seven years of entrance into program.
+N.V. 6 may count for the vocational nursing requirements as well as the multicultural requirement for an A.A./A.S. degree. Three of the twelve units may be applied to the multicultural requirement.
TOTAL UNITS REQUIRED: 48-59

The courses in the Vocational Nursing program are subject to change as a result of new or revised laws, policies, or regulations, as determined by the state.

ADVANCED PLACEMENT
Prospective students who have prior nursing education and/or experience may request evaluation for advanced placement. Upon qualifying for advanced placement, admission is dependent upon space being available. For further information, contact the Area Office.

APPLICATION PROCEDURES:
Applications are due in October for Spring semester. See nursing brochure for exact dates and more detailed information. The following documents must be received by the stated deadlines in order to be evaluated for admission:
- The completed and dated application.
- Official high school transcript documenting graduation, State of California High School Proficiency Examination Certificate, General Education Development Examination Certificate, or an associate or higher degree. (Students wishing to use course work completed in a foreign country to meet this requirement need to submit an official verification document completed by an acceptable foreign transcript evaluator.)
- Official transcripts documenting prerequisites and other completed required courses.
- Completion of the Sierra College graduation reading proficiency requirement.
- Completion of reading assessment testing.
- Copy of current California CNA certificate or proof of satisfactory completion if course taken recently and awaiting certification.
- Documentation of satisfactory CNA work experience in a hospital or skilled nursing facility once CNA course work has been completed.

NOTE: Classroom instruction is offered concurrently with clinical experience. All courses are sequential, and the student must successfully complete the objectives of each semester before progressing to the next. Grades of “C” or better are required in all Vocational Nursing courses.

NURSING, VOCATIONAL COURSES

N.V. 2 BASIC HUMAN NEEDS AND
THE NURSING PROCESS
Units: 11.5
Prerequisite: High school graduation or equivalent; completion of Bio.Sci. 55 or Bio.Sci. 5 or Bio.Sci. 7A & 7B, 6, Nut./Fd. 10, Hum.Dev. 1 or Hum.Dev. 1A/1B/1C, Psych. 1, and N.A. 3 with a grade of “C” or better or current CNA certification; validation of 12th grade reading by Assessment Center; overall GPA of 2.0 in prerequisites
Hours: 20.5 (7 lecture, 13.5 laboratory)
Theory and practice related to meeting physiological and psychological needs of adult/elderly patients and intrapartal families in stable condition with common, well-defined health problems. Includes nursing process, homeostatic adaptation, therapeutic communications, cultural diversity, principles of pharmacology, therapeutic drug administration, and ethical/legal responsibilities of the vocational nurse.

N.V. 4 COMMON ALTERATIONS IN BASIC HUMAN NEEDS
Units: 12
Prerequisite: Completion of N.V. 2 with a grade of “C” or better
Hours: 24 (6 lecture, 18 laboratory)
Theory and practice related to meeting the needs of adults and children with common health problems in acute care facilities, the home, and other community health agencies. Theory includes psychosocial aspects of development through the life span, ethical and legal issues related to specific clinical settings, pharmacology, and community health services. (Letter Grade Only)

N.V. 6 COMPLEX ALTERATIONS IN BASIC HUMAN NEEDS
Units: 12
Prerequisite: Completion of N.V. 4 with a grade of “C” or better
Hours: 24 (6 lecture, 18 laboratory)
Theory and practice related to meeting the physiological and psychosocial needs of patients with complex health problems in a variety of settings. Professional responsibilities of the vocational nurse and current issues/trends in health care will be included.
N.V. 8 INTRAVENOUS THERAPY
Units: 2
Prerequisite: LVN License required
Hours: As scheduled for a total of 30 hours lecture and 8 hours laboratory
Provides the LVN with knowledge and skills to start/superimpose intravenous fluids via primary/secondary infusion lines. Meets requirements of the Board of Vocational Nursing.

N.V. 9 DOSAGE CALCULATIONS FOR NURSES
(FORMERLY N.V. 401)
Units: 1-2
Hours: As scheduled for a total of 18 lecture hours per unit
Basic principles of dosage calculation and drug preparation for nurses. Not required for the Vocational Nursing Program.

N.V. 12 INTRAVENOUS THERAPY
AND BLOOD WITHDRAWAL
Units: 2
Prerequisite: LVN License required
Hours: As scheduled for a total of 38 hours (29 lecture, 9 laboratory)
Provides the LVN with knowledge and skills to start/superimpose intravenous fluids via primary/secondary infusion lines and the methods of blood withdrawal. Meets the requirements of the Board of Vocational Nurses for IV and blood withdrawal certification.

N.V. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

N.V. 400 SELECTED TOPICS IN VOCATIONAL NURSING
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Nursing, Registered

Completion of the Associate Degree Nursing Program qualifies the student to take the National Council of State Boards of Nursing Licensure Examination (NCLEX-RN). Upon passing the Exam, registered nurses are eligible to work in a variety of settings within the health care system as beginning staff nurses. The curriculum, approved by the California State Board of Registered Nursing, consists of both nursing and related general education courses, plus additional general education degree requirements. The nursing courses include theory classes and supervised concurrent clinical practice in local health care agencies. Some clinical practice evenings, nights, and weekends may be assigned.

At the expense of the student, a minor physical exam and proof of freedom of communicable disease and/or immunizations for the protection of the student and patients are required upon admission and prior to the first day of class. Students must also purchase an approved uniform and instructional materials required to achieve program objectives, maintain BLS-C certification, and be responsible for transportation to and from clinical facilities. Drug testing and background screening are required.

Licensed vocational nurses and others with previous nursing education and/or experience may receive credit and/or seek advanced placement in the program (see below). In order to be a graduate of the program and receive an associate degree in Registered Nursing, all program and A.A. or A.S. degree requirements must be met.

Students who complete the nursing and general education program courses (listed below) without completing the additional degree requirements (listed below), may take the Licensure Examination as NON-GRADUATES, but these students are not graduates of the program and do not receive degrees. Students who already have an Associate Degree or higher in another major do not have to meet the requirements for another degree, but must complete all nursing and general education program courses to become a graduate registered nurse.

Upon applying to the state for examination and licensure, students must be fingerprinted and submit documentation related to any received conviction; licensure may be denied. Interested students may obtain information and application packets from the Area Office in Room 101 at Roseville Gateway or from Counseling Offices at the Rocklin or Nevada County Campuses.
ADMISSION REQUIREMENTS:
1. Current Basic Life Support (BLS) certification for health care providers.
2. Official transcripts on file in the Area Office and Records Office documenting completion of all required college courses.
3. Licensed Vocational Nurses seeking advanced placement must hold a current California license.
4. Completion of the Sierra College graduation reading proficiency requirement.
5. Completion of reading assessment testing.

COURSES REQUIRED FOR PROGRAM COMPLETION AND DEGREE (All courses must be completed with a grade of “C” or better)

PROGRAM AND DEGREE GENERAL EDUCATION REQUIRED COURSES:
1. *Bio.sci. 4 Microbiology (or general bacteriology course)**
2. *Bio.sci. 5 Human Anatomy** OR *Bio.sci. 7A & 7B Principles of Human Anatomy**
3. *Bio.sci 6, Human Physiology**
4. *Psych. 1 Intro. to Psychology*
5. *Nut./Fd. 10 Nutrition**
6. *Hum.Dev. 1 Human Development*
7. *English 1A Composition & Literature*
8. *Comm.St. 1 Fundamentals of Public Speaking*
9. *Soc. 1 Intro. to Sociology OR Anthro. 2 Cultural Anthropology*
10. *Math. A Elementary Algebra or equivalent*

*Prerequisites required before entry into the Registered Nursing Program.

**Courses must be completed within seven years of entrance into program.

REGISTERED NURSING COURSES REQUIRED FOR PROGRAM AND DEGREE:
(Students will be assigned to Sequence 1 or Sequence 2)

Sequence 1:
N.R. 10 Introduction to Nursing and the Nursing Process
N.R. 12 Nursing the Adult with Common/Remedial Health Problems
N.R. 15 Nursing Management of Clients through the Life Cycle
+N.R. 19 Nursing Management-Multiple Patients with Complex Health Problems

Sequence 2:
N.R. 10 Introduction to Nursing and the Nursing Process
N.R. 12 Nursing the Adult with Common/Remedial Health Problems
N.R. 14 Nursing Management of Mental Health and Elderly Clients
N.R. 16 Nursing Management of Maternal and Child Clients
N.R. 18 Nursing Management of Patients with Complex Health Problems
+N.R. 20 Nursing Management-Multiple Patients with Complex Health Problems

+Courses may count for the registered nursing requirements as well as the Multicultural Studies requirement for an A.A./A.S. degree.

Students must be admitted to the Associate Degree Nursing Program before enrolling in the registered nursing courses. The registered nursing courses must be completed (or challenged) in sequence. Students must fulfill General Education Requirements for the A.A./A.S. degree. See pages 42-43.

Placement of students already holding an Associate Degree or higher in another major do not need to complete the general education requirements listed immediately above, unless they wish to obtain an A.A. or A.S. degree in Registered Nursing.

PLACEMENT POLICY FOR ASSOCIATE DEGREE NURSING PROGRAM:
1. Transfer credit is granted for all lower-division courses taken at other accredited colleges, providing the courses are comparable to the required program and degree courses.
2. Adhering to the “Credit by Examination” policy of the college, students who have prior knowledge and/or experience may challenge program and degree required courses.
3. The 30-unit option plan is offered, on a space available basis, for L.V.N.s currently licensed in California. Requirements include completion (or challenge) of acceptable college level courses in physiology and microbiology with grades of “C” or better prior to enrollment in the program and completion (or challenge) of N.R. 14, 18, and 20 in sequence, or N.R. 15 and 19 in sequence. Those who complete this option do not graduate or receive a degree.
4. Registered nurses who are graduates of hospital diploma programs may receive credit for their nursing program toward an associate degree.
5. Admission of any student eligible for advanced placement in the program following an academic evaluation is admitted on a first come, space available basis. Students re-entering the program, however, receive priority.

Students may obtain further information regarding program placement policies from the Area Office in Room 101 at the Roseville Gateway Campus.

CAREER MOBILITY LVN TO RN OPTION:
LVNs currently employed in a hospital or skilled nursing facility and licensed in California, who meet the college and program admission requirements and have completed the courses prerequisite to the second year nursing courses, may apply for advanced placement in N.R. 14 or N.R. 15. Upon admission, the student must complete the N.R. 14, 16, 18, and 20 sequence, or the N.R. 15 and 19 sequence, and the remaining required program and degree general education courses. Prerequisites Bio.sci. 4, 5 or 7A/7B, and 6 must be completed within seven years of entrance into the program.
APPLICATION PROCEDURES:
The following time frames are important for completing, returning, and filing the necessary forms for processing the program applications. See Nursing brochure for detailed information.
1. Beginning students applying for N.R. 10, L.V.N.s applying for N.R. 14 or N.R. 15, and other students returning or seeking advanced placement in other courses must have all applications and required documents in the Area Office in April for Fall Semester or October for Spring Semester. See Nursing brochure for exact dates.
2. The following documents must be received in the Area Office by the appropriate application deadline identified above in order to be evaluated for admission:
   - The completed application packet. (Incomplete applications will not be processed.)
   - Official college/university transcripts from all colleges attended documenting all course work completed.
   - Copy of current CPR card for health care professionals.
   - L.V.N.s seeking advanced placement or the 30-unit option must submit a copy of their current license.
3. Completion of reading assessment testing.

NURSING, REGISTERED COURSES

N.R. 2 BASIC CONCEPTS OF PHARMACOLOGY
Units: 2 Transfer: CSU
Hours: 2 lecture
Introduction to general principles of pharmacology. The nursing process is the basis for the study of the legal, ethical, cultural and psychologic aspects of drug therapy; substance misuse and abuse; poisons and antidotes; drug therapy throughout the life span; medication administration; fluids and electrolytes and diagnostic agents. Not a required course for ADN nursing programs.

N.R. 3 CAREERS IN NURSING
Units: 2 Transfer: CSU
Hours: 2 lecture
Designed for nursing majors and non-nursing majors. Provides an introduction to nursing history, roles, educational requirements and employment opportunities. Visit behind the scenes; see hospital and health care facilities in action.

N.R. 4 CLINICAL ASPECTS OF PHARMACOLOGY
Units: 2 Transfer: CSU
Hours: 2 lecture

N.R. 5 PHARMACOLOGY
Units: 2 Transfer: CSU
Advisory: Not open to students who have completed N.R. 2 and N.R. 4
Hours: 2 lecture
Basic principles of pharmacology with a focus on pharmacokinetics, pharmacodynamics, and related nursing implications for the major drug classes. Not a required course for the ADN program.

N.R. 6 IV THERAPY FOR CLINICAL PRACTICE
Units: 5 Transfer: CSU
Prerequisite: Enrollment in the last semester of ADN program or BSN program or I.P. or registered nurse who has graduated within the last two years and currently working in an Acute Care Hospital or Skilled Nursing Facility
Hours: As scheduled for a total of 14 hours (6 lecture, 8 laboratory)
Intravenous therapy theory, venipuncture skills, and problem solving for certification. Offered to currently enrolled students or recent graduates who have completed the nursing and skill courses focusing on I.V. Therapy.

N.R. 10 INTRODUCTION TO NURSING AND THE NURSING PROCESS
Units: 10 Transfer: CSU
Prerequisite: Completion of Bio.Sci. 4, 5 or 7A/7B, 6, Nut./Fd. 10, Hum.Dev. 1, Psych. 1, Math. A, and English 1A with grades of “C” or better; 12.5 grade reading level; overall GPA of 2.0 in prerequisites
Hours: 20 (5 lecture, 15 laboratory)
Introduction to nursing, with overview of its evolution, present trends and issues, legal and ethical aspects, and the major concepts underlying today’s practice. Theory and correlated clinical practice related to utilizing the nursing process based on Roy’s Adaptation Model to provide direct care to stable adult patients. Emphasis on basic human needs and promoting adaptive mechanisms for attaining and maintaining wellness. Students gain the knowledge and skills necessary to perform all basic nursing procedures. (Letter Grade Only)

N.R. 12 NURSING THE ADULT WITH COMMON/REMEDIAL HEALTH PROBLEMS
Units: 10 Transfer: CSU
Prerequisite: Completion of N.R. 10 with a grade of “C” or better
Hours: 20 (5 lecture, 15 laboratory)
Theory and correlated clinical practice related to utilizing the nursing process based on Roy’s Adaptation Model to promote adaptation by clients experiencing common and/or remedial illnesses/stressors. Students further develop skills and apply theory introduced in N.R. 10 in varied and more complex settings, and gain additional theory and skills related to new clinical areas and levels of responsibility. (Letter Grade Only)
N.R. 13 TRANSITION FROM LVN TO RN
Units: 1
Prerequisite: Admission to ADN program with advanced standing
Hours: As scheduled for a total of 18 lecture hours
Designed for vocational nurses who are admitted to the registered nursing program at Sierra College. Provides strategies to integrate the student into the RN program and its philosophy and curricular framework. (Credit/No Credit Grading)

N.R. 14 NURSING MANAGEMENT OF MENTAL HEALTH AND ELDERLY CLIENTS
Units: 6 Transfer: CSU
Prerequisite: Completion of N.R. 12 or current LVN licensure and Bio.Sci. 4, 5 or 7A/7B, 6, Nut./Fd. 10, Hum.Dev. 1, Psych. 1, Math. A and English 1A with a grade of “C” or better; 12.5 grade reading level
Corequisite: Comm.St. 1
Hours: 11 (3.5 lecture, 7.5 laboratory)
Theory and practice related to utilizing the nursing process (based on Roy's Adaptation Model) to care for adult clients having a variety of complex health problems. Includes role of registered nurse, nursing process, promotion of health/rehabilitation, health teaching, management, and leadership. Clinical practice in psychiatric and skilled nursing facilities. (Letter Grade Only)

N.R. 15 NURSING MANAGEMENT OF CLIENTS THROUGH THE LIFE CYCLE
Units: 12 Transfer: CSU
Prerequisite: Completion of N.R. 12 with a grade of “C” or better or current LVN licensure and Bio.Sci. 4, 5 or 7A/7B, 6, Nut./Fd. 10, Hum.Dev. 1, Psych. 1, Math. A, and English 1A with a grade of “C” or better; 12.5 grade reading level
Corequisite: Comm.St. 1 AND Soc. 1 or Anthro. 2
Hours: 23 (6.5 lecture, 16.5 laboratory)
Theory and practice related to utilizing the nursing process (based on Roy's Adaptation Model) to care for clients with mental health problems, elderly clients, obstetric and pediatric clients experiencing illness/stressors. Students further develop skills and apply theory introduced in lower level nursing courses and gain additional theory and skills related to new clinical areas and levels of responsibility. Includes the role of registered nurse, nursing process, promotion of health/rehabilitation, health teaching, management and leadership. Clinical practice is in psychiatric, skilled nursing facilities, pediatric and obstetric facilities. N.R. 15 is equivalent to the sequence of N.R. 14/N.R. 16. (Letter Grade Only)

N.R. 16 NURSING MANAGEMENT OF MATERNAL AND CHILD CLIENTS
Units: 6 Transfer: CSU
Prerequisite: Completion of N.R. 14 with a grade of “C” or better
Corequisite: Soc. 1 or Anthro. 2
Hours: 12 (3 lecture, 9 laboratory)
Theory and practice related to utilizing the nursing process (based on Roy’s Adaptation Model) to promote adaptation by maternal and/or pediatric clients experiencing illness/stressors. Students further develop skills and apply theory introduced in lower level nursing courses and gain additional theory and skills related to new clinical areas and levels of responsibility. (Letter Grade Only)

N.R. 18 NURSING MANAGEMENT OF PATIENTS WITH COMPLEX HEALTH PROBLEMS
Units: 5 Transfer: CSU
Prerequisite: Completion of N.R. 16 with a grade of “C” or better
Hours: 11 (2 lecture, 9 laboratory)
Theory and practice related to utilizing the nursing process (based on Roy’s Adaptation Model) to care for adult clients having a variety of complex health problems. Focus will be on the role of the registered nurse, promotion and health/rehabilitation, health teaching, management and leadership. Clinical practice in out-patient and acute care facilities. (Letter Grade Only)

N.R. 19 NURSING MANAGEMENT-MULTIPLE PATIENTS WITH COMPLEX HEALTH PROBLEMS
Units: 11 Transfer: CSU
Prerequisite: Completion of N.R. 15 or N.R. 16 with a grade of “C” or better
Hours: 23 (5 lecture, 18 laboratory)
Theory and practice related to utilizing the nursing process (based on Roy’s Adaptation Model) to care for adult clients having a variety of complex health problems. Focus will be on the role of the registered nurse, promotion and health/rehabilitation, health teaching, management and leadership of multiple clients. The clinical practice will be in the out patient and acute care facilities. N.R. 19 is equivalent to the sequence of N.R. 18/N.R. 20. (Letter Grade Only)

N.R. 20 NURSING MANAGEMENT-MULTIPLE PATIENTS WITH COMPLEX HEALTH PROBLEMS
Units: 6 Transfer: CSU
Prerequisite: Completion of N.R. 18 with a grade of “C” or better
Hours: 12 (3 lecture, 9 laboratory)
Theory and practice related to utilizing the nursing process (based on Roy’s Adaptation Model) to promote adaptation by multiple clients with complex health problems. Focus will be on leadership of a health care team and independent nursing management of multiple clients. The clinical practice will be in a variety of health care settings. (Letter Grade Only)
N.R. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

N.R. 95 INTERNSHIP IN REGISTERED NURSING
Units: .5-4  Transfer: CSU*
Designed for advanced students who are performing work in an area related to their college major in this discipline. Provides new on-the-job technical training under the direction of the supervisor, using equipment and personnel not normally available through the college. Must be currently enrolled in and complete at least 7 units including internship course units. May be taken four times for credit.

N.R. 400 SELECTED TOPICS IN REGISTERED NURSING
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and units credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

N.R. 601 R.N. RE-ENTRY COURSE
Units: 5.5 (Non-Degree Credit)
Prerequisite: Active California Registered Nurse license and a minimum of two years full-time experience as a registered nurse in an acute care hospital and/or skilled nursing facility within the last 10 years
Hours: As scheduled for a total of 207 hours (45 lecture, 162 laboratory)
Designed for RN’s returning to active practice. Teaches current nursing practice and updates skills. Approved for 30 hours continuing education credit. (Credit/No Credit Grading)

N.R. 603 NCLEX-RN REVIEW
Units: 1 (Non-Degree Credit)
Prerequisite: Completion of N.R. 19, or N.R. 20, or equivalent Hours: As scheduled for a total of 18 lecture hours
Strategies for taking the NCLEX exam are taught and practiced using critical thinking questions, including integrated nursing content from the four categories: Safe and effective care environment; Health promotion and maintenance; Psychosocial Integrity; and Physiological Integrity. (Credit/No Credit Grading)

Nutrition and Food Science

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACULTY: C. Dendinger, M. Mukutmoni
LIAISON COUNSELORS: T. Maddux, V. Rogers
The Nutrition and Food Science curriculum is designed to provide students with knowledge of nutrition principles and skills in food preparation techniques. The curriculum provides education for transfer to upper division institutions for careers in foods, food preparation or food service, dietetics and dietary health care, and promotes optimum health to maximize one’s physical, social, and economic potential.

NUTRITION & FOOD SCIENCE COURSES

NUT./FD. 1 PRINCIPLES OF FOOD PREPARATION
Units: 3  Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Principles and methods of basic knowledge of food science and food preparation techniques. Introduces time management, meal planning, food preparation and sanitation. Consideration goes to legal, social, and economic factors that influence food selection and consumption. Designed for family and consumer science majors as well as majors related to food science, culinary, and nutrition.

NUT./FD. 4 NUTRITION, HEALTH AND FITNESS (ALSO P.E. 4)
Units: 3  Transfer: CSU/UC*
Hours: 4 (2 lecture, 2 activity)
An educational interactive class on nutrition and fitness. Students design a health program for themselves which includes a nutrition eating plan and a fitness program.

NUT./FD. 5 FOOD PREPARATION FOR NUTRITION, HEALTH & FITNESS
Units: 3  Transfer: CSU
Hours: 5 (2 lecture, 3 laboratory)
Principles and methods of healthy selection of foods based on current research and USDA dietary guidelines. Recipe selection, menu planning, food preparation, evaluation and analysis of healthy choices. Caloric value of menus based on health, nutrition, fitness and exercise of individuals.

NUT./FD. 10 NUTRITION
Units: 3  Transfer: CSU/UC*
Hours: 3 lecture
Fundamentals of human nutrition, with emphasis on the body’s use of food nutrients. Recommended for students interested in the scientific approach to the study of nutrition.
NUT./FD. 12 INTRODUCTION TO NUTRITION AND METABOLISM

Units: 3  Transfer: CSU
Hours: 3 lecture
Introduction to the structure, type, and metabolism of protein, carbohydrate, and fat; the biological roles of vitamins and minerals. Discussion of energy utilization and obesity. Nutrition in relation to physical fitness and health.

NUT./FD. 13 NUTRITION THROUGHOUT THE LIFE CYCLE

Units: 3  Transfer: CSU
Prerequisite: Completion of Nut./Fd. 10
Hours: 3 lecture
Examination of nutritional concerns, requirements, and metabolism during several stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence and the elderly years. Analysis of cultural, environmental, physical, and economic factors affecting nutritional status. Study methods of assuring adequate nutrition through dietary selection and promotion of maternal, infant, geriatric health.

NUT./FD. 28 INDEPENDENT STUDY

Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

NUT./FD. 95 INTERNSHIP IN NUTRITION AND FOOD SCIENCE

Units: 5-4  Transfer: CSU*
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for Fall and Spring semester internships, or at least one other course for summer internships.
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

Perceptual Training

STUDENT SERVICES
ASSOCIATE VICE PRESIDENT: Mandy Davies
DEAN: Kaylene Hallberg
DIVISION OFFICE: Winstead Center L-110
FACULTY: T. Prouty, M. Shelley, D. Stone
AREA OFFICE: MT-8
LIAISON COUNSELORS: S. Bramlett, B. Hancock

Courses offered in this department are designed primarily for Learning Disabled students. The emphasis is placed on perceptual development through an individualized program. These courses may include vision training, auditory processing/discrimination, and learning strategies.

PERCEPTUAL TRAINING COURSES

PRCP.TR. 601 VISUAL PERCEPTUAL SKILLS
Units: .5-1 (Non-Degree Credit)
Advisory: Completion of Lrn.Dis. 610 and placement by a Learning Disabilities Specialist recommended
Hours: As scheduled for a total of 54 laboratory hours per unit
Develops visual perceptual skills using multi-sensory approaches to learning. Promotes ability to process visual information by improving tracking, fusion, peripheral vision, perceptual speed, and visual memory. Designed for students with learning disabilities. May be taken four times for credit.
(Credit/No Credit Grading)

PRCP.TR. 602A INTRODUCTORY PHONETIC CONCEPTS
Units: 3 (Non-Degree Credit)
Advisory: Completion of Lrn.Dis. 610, equivalent course, or assessment recommendation of Learning Disabilities Specialist
Hours: 3.5 (2.5 lecture, 1 activity)
Develops skills for phonetic letter-sound association and sequence in words. Promotes the ability to use single-syllable word attack and spelling generalizations for improved reading and spelling. Increases understanding of learning disabilities and features multi-sensory discovery learning. Designed for students with learning disabilities. May be taken twice for credit.
PRCP.TR. 602B ADVANCED PHONETIC CONCEPTS
Units: 3 (Non-Degree Credit)
Prerequisite: Completion of Prcp.Tr. 602A, or equivalent course, or recommendation of Learning Disabilities Specialist
Hours: 3.5 (2.5 lecture, 1 activity)
Continues to develop skills for phonetic letter sound association and sequence in words. Promotes the ability to use multi-syllable word attack and spelling generalizations for improved reading, spelling and writing fluency. Furthers understanding of learning disabilities and features multi-sensory discovery learning. Designed for students with learning disabilities. May be taken twice for credit.

Personal Development

STUDENT SERVICES
ASSOCIATE VICE PRESIDENT: Mandy Davies
DEAN: Vacant
DIVISION OFFICE: Winstead Center L-102
FACULTY: H. Akana, K. Bray, E. Dickson, T. Haenny, R. Hancock, B. Hawkes, M. Kwoka, T. Maddux, N. Martinis, M. Moon, C. Morris, S
LIAISON COUNSELORS: M. Moon, K. Parker

Courses offered in this department are designed to assist students with the transition to college life by setting realistic educational, career, and personal goals.

PERSONAL DEVELOPMENT COURSES

P.D. 1 COLLEGE SUCCESS
Units: 3
Transfer: CSU/UC
Hours: 3 lecture
Strategies for creating success in college, life and career. Academic methods for test-taking, memory improvement, note-taking, critical thinking, and research skills. Techniques for effective time management, goal setting, increased self-awareness, motivation, communication and stress reduction.

P.D. 8 ORIENTATION TO COLLEGE
Units: .5-2
Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours per .5 unit
Introduction to college services, academic resources, educational opportunities and college study practices. Strategies for time management, goal setting and steps to choosing a major. Students will formulate an educational plan to increase success in reaching educational goals.

P.D. 9 ASSERTIVENESS TRAINING
Units: 1
Transfer: CSU
Hours: As scheduled for a total of 18 lecture hours
Step by step strategies for becoming more assertive, rather than passive or aggressive. Learn verbal and nonverbal skills for communicating with people more authentically, effectively and fairly. Examines cultural and social differences in assertive communication.

P.D. 6 CAREER PLANNING
Units: 3
Transfer: CSU
Hours: 3 lecture
Individual assessments of personality, interests, values, and skills to help identify appropriate careers and college majors. Occupational research, research on educational requirements, goal setting, decision-making, and job search strategies; including resume writing and interviewing.

P.D. 21 SELF ASSESSMENT AND CAREER EXPLORATION THROUGH TECHNOLOGY
Units: .5-1
Transfer: CSU
Hours: 3 lecture, 12 activity (.5 unit); 6 lecture, 24 activity (1 unit)
Assists students in self assessment, decision making and career exploration through the use of technology and career assessment tools.

P.D. 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

P.D. 52 STUDENT LEADERSHIP DEVELOPMENT
Units: 2
Transfer: CSU
Hours: 3 (1 lecture, 2 activity)
Leadership in student government, campus clubs and non-academic contexts. Application of practical leadership skills on out-of-class projects; includes planning and running effective meetings, parliamentary procedure, group leadership and motivation techniques.
P.D. 94 CAREER EXPLORATION INTERNSHIP
Units: .5-4  Transfer: CSU
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships
Exposure to business/industry under the direction of a worksite supervisor, related to student’s educational or occupational goals. Develops career awareness, experience and knowledge with a focus on job skills that would enhance academic learning. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

P.D. 150C CAREERS IN THE COMPUTER INDUSTRY (ALSO CIE/CIS/CS/CST 150)
Units: .5  Transfer: CSU
Hours: As scheduled for a total of 9 lecture hours
Career exploration in the computer industry. Includes orientation to the academic program at Sierra College, employment opportunities, career pathways, educational planning of the Associates degree, certificate, transfer, research of labor market and occupational information. (Credit/No Credit Grading)

P.D. 300 SELECTED TOPICS IN PERSONAL DEVELOPMENT
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Philosophy

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: J. Haproff, J. Terry
LIAISON COUNSELORS: K. Bray, V. Rogers

Philosophy concerns the study of fundamental questions that arise in different areas of human experience, thought, or practice. Philosophy is the basis of a sound humanistic or liberal arts education. The Philosophy program aims to make this natural activity of thought both richer and more systematic. Courses are offered which provide opportunities for self development and the building of a coherent outlook and critical reason. In addition, the lower division prerequisites for a four-year philosophy major are offered.

TRANSFER MAJOR REQUIREMENTS in Philosophy are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

PHILOSOPHY—A.A. DEGREE
The Philosophy Department serves a diverse student population in preparation for upper division coursework in Philosophy at a four-year university as well as through offering general education courses for non-philosophy majors. The A.A. degree in Philosophy will prepare students for upper-division work in Philosophy by acquainting them with the relevant terminology and conceptual positions with regards to the major subdivisions of the discipline: Metaphysics, Epistemology, Axiology and Logic. Courses are offered which provide opportunities for self development and the building of a coherent outlook and critical reason. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43.

REQUIRED CORE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy 12 Introduction to Symbolic Logic</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 20 History of Greek Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 21 History of Modern Philosophy</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 12 UNITS FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Philosophy 2 Introduction to Philosophy: Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 6 Introduction to Philosophy: Knowledge &amp; Reality</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 4 Introduction to Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 10 Philosophy of Religion</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 13 Asian Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 15 Introduction to Philosophies of Self &amp; Personhood</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 27 Introduction to Philosophy of Women in World Cultures</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 50 Introduction to Philosophy through Literature</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 65 Introduction to Philosophy of Science</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 21
PHILOSOPHY COURSES

PHIL. 2 INTRODUCTION TO PHILOSOPHY: ETHICS
Units: 3  Transfer: CSU/UC
Hours: 3 lecture/discussion
Western systems of ethics—ancient Greek ethics, modern Utilitarianism, Kantian ethics, and their application to contemporary moral dilemmas. Concepts of personhood and social change also included. (CAN PHIL 4)

PHIL. 4 INTRODUCTION TO CRITICAL THINKING
Units: 3  Transfer: CSU/UC
Hours: 3 lecture/discussion
A study of the relationship between logic and language. Emphasis on informal fallacies, deductive logic, and symbolic techniques for testing validity. Inductive logic and an analysis of scientific method included. Teaching of the elements of the argumentative essay. Writings of assigned reading require analysis, criticism, and synthesis. (CAN PHIL 6)

PHIL. 6 INTRODUCTION TO PHILOSOPHY: KNOWLEDGE AND REALITY
Units: 3  Transfer: CSU/UC
Hours: 3 lecture/discussion
Introduction to the techniques and primary problems of philosophy. Including logic and knowledge, the free will-determinism issue, God and religion, morality and society, and the mind-body issue. (CAN PHIL 2)

PHIL. 10 PHILOSOPHY OF RELIGION
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Analysis of the major philosophical issues raised by religion. Includes the possibility of knowing the existence and nature of the divine, the meaning of suffering and death, and the concepts of the soul and of the miraculous, theories about the nature and function of the language of religion, the relationships between religion and religious dogma, and the evolution of religious thought.

PHIL. 12 INTRODUCTION TO SYMBOLIC LOGIC
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Introduction to sentence and predicate logic, syntax and semantics, transcription between ordinary and symbolic languages, deductive validity and proof techniques.

PHIL. 13 INTRODUCTION TO ASIAN PHILOSOPHY
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Major philosophies and religions of Asia including Hinduism, Jainism, Buddhism, Taoism, Confucianism, and Shinto. Focus on the origins, myths, basic teaching and traditions. Special attention to present influences of Eastern Philosophy and religion on Western Culture.

PHIL. 15 INTRODUCTION TO PHILOSOPHIES OF SELF AND PERSONHOOD
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
An examination of rival theories of personhood from various philosophical, religious and scientific perspectives. Includes Confucian, Hindu, Buddhist and Judeo-Christian conceptions of personhood as well as the philosophical views represented by Plato, Kant, Marx, Freud, Skinner, Lorentz, and Sartre.

PHIL. 20 HISTORY OF GREEK PHILOSOPHY
Units: 3  Transfer: CSU/UC
Hours: 3 lecture/discussion
A study of the rise of philosophy in ancient Greece: the Milesian philosopher--scientists, Socrates, Plato, Aristotle, Stoicism, Skepticism, Epicureanism. (CAN PHIL 8)(With Phil 21, CAN PHIL SEQ A)

PHIL. 21 HISTORY OF MODERN PHILOSOPHY
Units: 3  Transfer: CSU/UC
Hours: 3 lecture/discussion
Western philosophy from the rise of modern science through the systems of Descartes, Hobbes, Spinoza, Locke, Leibniz, Berkeley, Hume, Kant, Mill, and Russell. (CAN PHIL 10)(With Phil 20, CAN PHIL SEQ A)

PHIL. 27 INTRODUCTION TO PHILOSOPHY OF WOMEN IN WORLD CULTURES
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Introduction to the concepts of womanhood and feminism in mythic, classic, medieval and major philosophical traditions. Emphasis on the images, roles and beliefs about women found in the humanities and philosophy with respect to their impact and contemporary relevance.

PHIL. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

PHIL. 50 INTRODUCTION TO PHILOSOPHY THROUGH LITERATURE
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Introductory exploration of philosophical themes through various genres of literature. Topics will include: knowledge, truth, personal identity, ethics, justice, religious belief and free will.
PHIL. 65 INTRODUCTION TO THE PHILOSOPHY OF SCIENCE

Units: 3  Transfer: CSU/UC
Hours: 3 lecture

The philosophical foundations of science such as criteria for distinguishing between science and pseudo-science, questions concerning scientific progress, justification of scientific hypotheses, the theory-dependence of observation, the nature of scientific revolutions, the possibility of objectivity and the challenges of relativism, feminism and marginalization.

Photography

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: R. Gregg, R. Snook
LIAISON COUNSELORS: K. Bray, M. Moon

Photography is offered as a creative means of visual expression with artistic and commercial application. Opportunities for experimental and applied aspects are provided from the beginning through advanced levels. A serious effort is made to structure offerings so that students can attain individual goals in the field of Photography. Photographic skills complement other diverse fields such as science, horticulture, teaching, anthropology, art and real estate. This complementary aspect is also stressed in the program.

TRANSFER MAJOR REQUIREMENTS in Photography are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which students of Photography are qualified are professional photographer, commercial photographer, advertising, and photographic journalism.

PHOTOGRAPHY—A.A. OR A.S. DEGREE

Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED COURSES

15 UNITS REQUIRED FROM THE FOLLOWING CORE:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo. 10 History &amp; Aesthetics of Photography (also Art 11)</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 60A Elementary Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 60B Intermediate Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 65 Documentary Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 70A Advanced Photography</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 75 Introduction to Electronic Imaging (also Art/Des. 75)</td>
<td>3</td>
</tr>
</tbody>
</table>

PLUS 10 UNITS SELECTED FROM THE FOLLOWING:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Des. 99 Digital Portfolio</td>
<td>2-3</td>
</tr>
<tr>
<td>Art/Des. 30 Photographing Works of Art (also Photo. 30)</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 28 Independent Study</td>
<td>1-2</td>
</tr>
<tr>
<td>Photo. 61 Photography Laboratory</td>
<td>1-2</td>
</tr>
<tr>
<td>Photo. 70B Advanced Photography</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 76 Advanced Projects in Electronic Imaging (also Art/Des. 76)</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 78 Digital Photography</td>
<td>2-4</td>
</tr>
<tr>
<td>Photo. 80 Basic Color Photography</td>
<td>2-4</td>
</tr>
<tr>
<td>Photo. 81 Color Printing</td>
<td>2-4</td>
</tr>
<tr>
<td>Photo. 85 Photojournalal</td>
<td>2-4</td>
</tr>
<tr>
<td>Photo. 90A-T Photography Field Workshop</td>
<td>5-2</td>
</tr>
<tr>
<td>Photo. 91A-C Alternative Processes Workshop</td>
<td>5-2</td>
</tr>
<tr>
<td>Photo. 95 Internship</td>
<td>5-2</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 29
ALTERNATIVE PROCESSES IN PHOTOGRAPHY SKILLS CERTIFICATE

For those students who want to broaden their expressive abilities beyond the traditional photographic image. Helps prepare students for creative image making for the advertising and portrait photography markets. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Photo. 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>Photo. 60B Intermediate Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 61 Photography Laboratory Experience</td>
<td>1</td>
</tr>
<tr>
<td>Photo. 90G Pinhole Photography Workshop</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 91A Alternative Processes Workshop: Polaroid</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 91B Alternative Processes Workshop: Handcoloring</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 91C Alternative Processes Workshop: Cyanotype</td>
<td>5</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 6

COLOR PHOTOGRAPHY SKILLS CERTIFICATE

Assists in preparing students to create visually stimulating images utilizing the power of color. Focuses on the aesthetic use of color, as well as technical mastery of color balancing, accuracy, and manipulation. These skills are necessary for both laboratory technicians and photographers. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Des. 30 Photographing Works of Art (Also Photo. 30)</td>
<td>5</td>
</tr>
<tr>
<td>Art/Des. 75 Introduction to Electronic Imaging (Also Photo. 75)</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 80 Basic Color Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 81 Color Printing</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 90B Field Workshop: Cityscape</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 90l Field Workshop: Night Photography</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 90l Field Workshop: Landscape</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 90T Travel Photography Field Workshop</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 9

LANDSCAPE PHOTOGRAPHY SKILLS CERTIFICATE

Course work in landscape photography trains students in the techniques utilized in creating expressive images of the environment. Helps prepare students for capturing the landscape for stock photography use, magazines, web sites and other visual media. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>Photo. 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>Photo. 81 Color Printing</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 90A Introduction to the Zone System</td>
<td>1</td>
</tr>
<tr>
<td>Photo. 90B Field Workshop: Cityscape</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 90l Field Workshop: Landscape</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 90T Travel Photography Field Workshop</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 9

NARRATIVE PHOTOGRAPHY SKILLS CERTIFICATE

This certificate trains students to photograph assignments in such a way that they tell a story. Appropriate for those interested in gaining skills used by photojournalists, documentary and editorial photographers. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo. 60B Intermediate Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 65 Documentary Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 80 Basic Color Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 85 Photojournalism</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 90H Documentary Field Workshop</td>
<td>5-1</td>
</tr>
<tr>
<td>Photo. 90J Photojournalism Field Workshop</td>
<td>5-1</td>
</tr>
<tr>
<td>Photo. 90M Autobiographical Photography</td>
<td>5-1</td>
</tr>
<tr>
<td>Photo. 90T Travel Photography Field Workshop</td>
<td>1-3</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 10

DIGITAL IMAGING SKILLS CERTIFICATE

Designed for students interested in becoming proficient with photographic image capture, preparation, and manipulation on the computer. Valuable for those preparing for a career as a photographer, photographic lab technician, or for those upgrading their skills. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**REQUIRED COURSES**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Des. 65 Capturing Digital Images</td>
<td>1</td>
</tr>
<tr>
<td>Art/Des. 75 Introduction to Electronic Imaging (Also Photo. 75)</td>
<td>3</td>
</tr>
<tr>
<td>Art/Des. 76 Advanced Projects in Electronic Imaging (Also Photo. 76)</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 78 Digital Photography</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL UNITS REQUIRED:** 9

PHOTOGRAPHIC PROCESSES SKILLS CERTIFICATE

Designed to give students a broad range of skills used by both laboratory technicians and photographers. Helps train students to handle a wide range of difficult assignments and creative techniques. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

**12 UNITS SELECTED FROM THE FOLLOWING:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo. 10 History and Aesthetics of Photography (Also Art 11)</td>
<td>3</td>
</tr>
<tr>
<td>Photo. 28 Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>Photo. 30 Photographing Works of Art (Also Art/Des. 30)</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 60B Intermediate Photography</td>
<td>5</td>
</tr>
<tr>
<td>Photo. 78 Digital Photography</td>
<td>2</td>
</tr>
<tr>
<td>Photo. 81 Color Printing</td>
<td>2</td>
</tr>
</tbody>
</table>
PHOTOGRAPHY COURSES

PHOTO. 10 HISTORY AND AESTHETICS
OF PHOTOGRAPHY (ALSO ART 11)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Historical and thematic survey of photography as an art form and communication tool from its invention to the present. Explores various critical perspectives including aesthetic and design principles, influential themes, periods, and photographers. Investigates technical considerations, functions and photography's role in the development of mass culture.

PHOTO. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU
Designed for photography majors interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, portfolio development, research papers and projects, and special construction projects. May be taken four times for credit. See Independent Study page in catalog.

PHOTO. 30 PHOTOGRAPHING WORKS
OF ART (ALSO ART/DES. 30)
Units: .5 Transfer: CSU
Hours: As scheduled for a total of 13 hours (7 lecture, 6 laboratory)
Methods and procedures involved in reproducing works of art into slides, prints or digital files for cataloging, portfolios, or publication. Covers equipment needed for both artificial and natural light situations, camera considerations, proper exposure, film types, and presentation of copy work for both two dimensional and three dimensional art. Students must furnish film, processing, storage and presentation materials. May be taken twice for credit.

PHOTO. 60A ELEMENTARY PHOTOGRAPHY
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 3 (1 lecture, 2 activity)
Aesthetic use of camera and darkroom techniques in black and white photography. Elements of design and influence of photography as art form explored. Topics include subject selection, exposure control, film development, contact printing, enlarging, composition, lighting, filters, print finishing, presentation, and responses to photographs within framework of historical and current perspectives. Students must furnish camera, film, and paper. (CAN ART 18)

PHOTO. 60B INTERMEDIATE PHOTOGRAPHY
Units: 2 Transfer: CSU/UC
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 3 (1 lecture, 2 activity)
Technical and experimental aspects of photographic tools and techniques stressing the creative use of photography. Topics include the handmade book, creative camera and darkroom experimentation, archival permanence and exposure techniques. Students must furnish camera, film, paper and presentation materials. May be taken twice for credit.

PHOTO. 61 PHOTOGRAPHY LABORATORY EXPERIENCE
Units: .5-1
Corequisite: Concurrent enrollment in a photography course
Hours: 1.5 laboratory (.5 unit); 3 laboratory (1 unit)
Photographic laboratory concentrating on processing and printing of film and paper. Provides individual assistance with projects requiring special darkroom techniques. Studio, color and digital imaging laboratory available as appropriate. Students must provide film and paper. May be taken four times for credit.
PHOTO. 65 DOCUMENTARY PHOTOGRAPHY
Units: 2  Transfer: CSU
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 3 (1 lecture, 2 activity)
Photographic essay as a focused body of work. Historical origins and cultural impact of documentary photography and contemporary practice. Issues of subjective and objective response to subject matter, influence of photographic technology upon content, point of view and propaganda, organization of visual essays, and archival processing. Students select projects of personal interest and expression and participate in group projects. Students must furnish camera, film, paper and presentation materials. May be taken twice for credit.

PHOTO. 70A ADVANCED PHOTOGRAPHY
Units: 3  Transfer: CSU
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 4 (2 lecture, 2 activity)
Studio topics in portraiture and still life with emphasis on photographic communication and expression of ideas through controlled lighting. Concentration on creative control in camera use, exposure, and composition. For students seeking a career in photography or one of its related fields, and for those who desire additional and advanced creative or technical work. Students must furnish camera, film, paper and presentation materials.

PHOTO. 70B ADVANCED PHOTOGRAPHY
Units: 3  Transfer: CSU
Prerequisite: Completion of Photo. 70A or equivalent
Hours: 4 (2 lecture, 2 activity)
Additional creative and technical work with lighting, composition, and portfolio development. Concentration on refining studio techniques used in commercial and fine art photography. Students work with medium and large format cameras and a variety of film choices including digital. Students must furnish film, paper, and presentation materials. May be taken twice for credit.

PHOTO. 75 INTRODUCTION TO ELECTRONIC IMAGING (ALSO ART/DES. 75)
Units: 3  Transfer: CSU/UC
Advisory: Completion of Art/Des. 70 recommended
Hours: 4 (2 lecture, 2 laboratory)
Introduction to the field of electronic imaging and image processing with computers. Critical analysis and operating principles in the acquisition, processing, synthesis and printing of the electronic image. Basic computer scanning, retouching methods, image manipulation and final printing and presentation of images. May be taken twice for credit.

PHOTO. 76 ADVANCED PROJECTS IN ELECTRONIC IMAGING (ALSO ART/DES. 76)
Units: 3  Transfer: CSU
Advisory: Completion of Art/Des. 75 and Photo. 60A, 80, or 81 recommended
Hours: 4 (2 lecture, 2 laboratory)
Advanced digital project development. Creating original images from a variety of input devices including scanning, digital cameras and CDs. Speed building in editing techniques. Use of various output methods appropriate for specific projects. Evaluations and critiques of completed projects. May be taken three times for credit.

PHOTO. 78 DIGITAL PHOTOGRAPHY
Units: 2  Transfer: CSU
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 3 (1 lecture, 2 activity)
Use of digital cameras for direct capture of photographic images. Comparison of viewfinder, SLR and digital scanning backs. Integration of traditional and digital scanning backs. Integration of traditional and digital photography. Color management and digital output to inkjet printers, film recorders, etc. Students must furnish digital printing materials, digital storage media and film. May be taken twice for credit.

PHOTO. 80 BASIC COLOR PHOTOGRAPHY
Units: 2  Transfer: CSU
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 3 (1 lecture, 2 activity)
Concentration on composition, exposure, color, and theme. Camera techniques, storage, and editing are also covered. Students create multimedia slide presentations using traditional and digital projection methods. Presentation topics include scanning film, digital file preparation, and organization of the visual narrative. Students must provide 35mm camera, color transparency film, and processing. May be taken twice for credit.

PHOTO. 81 COLOR PRINTING
Units: 2  Transfer: CSU
Prerequisite: Completion of Photo. 60A or concurrent enrollment in Photo. 70A
Hours: 3 (1 lecture, 2 activity)
Printing from color negative films. Topics include exposure, technical control of materials, composition, and presentation. Students must supply cameras, film, and paper. May be taken twice for credit.
PHOTO. 85 PHOTOJOURNALISM
Units: 2 Transfer: CSU
Prerequisite: Completion of Photo. 60A or equivalent
Hours: 3 (1 lecture, 2 activity)
Theory and practice of photography for publication in newspapers and magazines. Emphasis on communication with single images and photographic essays. Simulations of professional assignments including deadlines. College publications may be utilized for practical application. Students must furnish 35mm cameras, film and paper, or digital camera with interchangeable lenses and computer storage media. May be taken twice for credit.

PHOTO. 90 PHOTOGRAPHY FIELD WORKSHOP
Units: .5-3 Transfer: CSU
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit
Intensive field workshops covering specific topics especially suited for the particular photographic problem, season, geographic location, or equipment and event. Each workshop may be repeated four times for credit.

PHOTO. 90A INTRODUCTION TO THE ZONE SYSTEM
Units: 1 Transfer: CSU
Advisory: Completion of Photo. 60A or equivalent
Hours: As scheduled for a total of 26 hours (14 lecture, 12 activity)
Basic study of the Zone System as it affects film and exposure. Topics include visualizing print, metering, placing values, determining exposure range of a scene, and expansion and contraction development. Students conduct film speed tests on black and white film. Primarily focused on black/white photography, though some material regarding color will be presented. May be taken four times for credit.

PHOTO. 90B FIELD WORKSHOP: CITYSCAPE
Units: .5-3 Transfer: CSU
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit
Exploration of the city and urban environments as subject matter. Topics include composition, film choice, equipment, and the traditions of cityscape photography. Location of field study will vary. Students must furnish camera, film, processing and presentation materials. May be taken four times for credit.

PHOTO. 90G PINHOLE PHOTOGRAPHY WORKSHOP
Units: .5-3 Transfer: CSU
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit
Design, construction and use of simple, inexpensive lensless cameras from containers of various sizes and shapes with emphasis on function and aesthetics. Aperture calculations and effects of camera shape upon image shape. Comparisons with traditional cameras and photography. Historical background and current resurgent interest in pinhole photography explored. May be taken four times for credit.

PHOTO. 90H DOCUMENTARY FIELD WORKSHOP
Units: .5-3 Transfer: CSU
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit
Intensive field workshop covering specific locations, methods and processes of documentary record making and interpretation. Students must furnish camera, film, and processing supplies. May be taken four times for credit.

PHOTO. 90I FIELD WORKSHOP: NIGHT PHOTOGRAPHY
Units: .5-3 Transfer: CSU
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit
Intensive field workshop covering methods and processes of night, artificial and available light photography. Topics include camera and lens use, composition, film choice, filters, equipment, metering, lighting, and the unique aspects of the event, region or situation being studied. Specific locations and lighting circumstances vary. Students must furnish camera, film, and processing materials. May be taken four times for credit.

PHOTO. 90J PHOTOJOURNALISM FIELD WORKSHOP
Units: .5-3 Transfer: CSU
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit
Intensive field workshop covering specific events, styles, locations, methods, and processes of photojournalism. Topics include camera and lens use, composition, film choice, equipment, metering and lighting, working methods of photojournalists and the unique aspects of the event or region being studied. Students must furnish camera, film, and processing supplies. May be taken four times for credit.
PHOTO. 90L FIELD WORKSHOP: LANDSCAPE  
Units: .5-3  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit  
Exploration of landscape photography. Topics include camera and lens use, composition, film choice, equipment, metering and lighting, the social contribution of landscape photography and the unique aspects of region being studied. Aspects of travel photography also explored. Location of field study will vary. Students must supply camera, film, processing and presentation materials. May be taken four times for credit.

PHOTO. 90M AUTOBIOGRAPHICAL PHOTOGRAPHY  
Units: .5-3  
Transfer: CSU  
Advisory: Completion of Photo. 60A or equivalent  
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit  
Photography as a tool of expression, exploration and documentation. Topics include autobiographical references in art and photography, point of view, self-as-subject, varieties of personal description, and the influence of context such as gender, age, family, and culture upon visual communication. May be taken four times for credit.

PHOTO. 90P WORKSHOP: PORTRAIUTES  
Units: .5-3  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit  
Exploration of portraiture in outdoor settings. Topics include camera, lens, film and equipment selection, camera use, lighting, posing, and composition. Students provide camera, film, processing and presentation materials. Location of field study will vary. May be taken four times for credit.

PHOTO. 90T TRAVEL PHOTOGRAPHY FIELD WORKSHOP  
Units: .5-3  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours activity per .5 unit  
Intensive field workshop covering specific locations, methods and processes of travel photography in domestic and international locations. Includes visual themes, narrative and individual images, editorial and stock photography, composition, film and digital cameras, materials and equipment, exposure, selection and presentation of photographs. Overview of the population, habitat, environment and geography, culture and traditions of the region being studied. Special considerations of travel photography. Students must furnish camera, film or digital media, processing and presentation supplies. May be taken four times for credit.

PHOTO. 91 ALTERNATIVE PROCESSES WORKSHOP  
Units: .5  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours laboratory  
Intensive workshop covering specific techniques and methods of alternative photographic processes. Such topics as cyanotype, handcoloring and various Polaroid processes will be scheduled. Students must provide film and paper. Each subtitle may be taken four times for credit.

PHOTO. 91A ALTERNATIVE PROCESSES WORKSHOP: POLAROID  
Units: .5  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours laboratory  
Intensive workshop covering Polaroid transfer and manipulation processes. Students must provide film and paper.

PHOTO. 91B ALTERNATIVE PROCESSES WORKSHOP: HANDCOLORING  
Units: .5  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours laboratory  
Intensive workshop exploring handcoloring black and white photographs. Various methods will be covered. Students must provide photographic paper and some materials used in handcoloring.

PHOTO. 91C ALTERNATIVE PROCESSES WORKSHOP: CYANOTYPE  
Units: .5  
Transfer: CSU  
Hours: As scheduled for a total of 7 hours lecture and 6 hours laboratory  
Intensive workshop exploring the cyanotype processes. Cyanotype is an historic non-silver photographic process which gives a blue image. Students must provide film and paper.

PHOTO. 95 INTERNSHIP IN PHOTOGRAPHY  
Units: .5-4  
Transfer: CSU*  
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships.  
Designed for advanced students who are performing work in an area related to their educational or career goal. Provides new on-the-job technical training under the direction of the supervisor, allowing the student to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.
Physical Education and Athletics

HEALTH, PHYSICAL EDUCATION, RECREATION/ATHLETICS
DEAN: John Volek
DIVISION OFFICE: Ft
LIAISON COUNSELORS: C. Epting-Davis, N. Martinis

The Division provides the opportunity for individuals and groups to learn skills, develop total fitness, and participate in activities that provide carry-over interests, physiological results, and wholesome social interchange. Lower division curricula for majors is dependent upon California university and out-of-state university requirements.

TRANSFER MAJOR REQUIREMENTS in Health Education, Recreation, Physical Education, and Athletics are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Four-year graduates in Health Education, Recreation, Physical Education, and Athletics qualify for employment in private industry and recreational agencies and are prepared to seek teaching credentials in elementary or secondary education.

Letter codes for P.E. activity classes:
(W) indicates best suited for women;
(M) indicates best suited for men;
However, classes are open to all students.

PHYSICAL EDUCATION—
A.A. OR A.S. DEGREE

The Physical Education A.A./A.S. degree provides students with the opportunity to meet the requirements for transferring to four-year colleges in the areas of Physical Education, Exercise Science, Kinesiology, and Athletic Training. The program in Physical Education outlined below is typical of lower-division requirements for four-year colleges and universities; some requirements vary from college to college. Students are advised to meet with a counselor before selecting courses for appropriate campus specific course requirements.

REQUIRED CORE COURSE: UNITS
P.E. 81 Introduction to Physical Education ......................... 3

PLUS 9-10 UNITS FROM THE FOLLOWING:
Bio.Sci. 5 Human Anatomy OR
Bio.Sci. 7A Principles of Human Anatomy AND ................ 4
Bio.Sci. 7B Principles of Human Anatomy ......................... 4
Bio.Sci. 6 Human Physiology ........................................... 5
Chem. 2A Introduction to Chemistry ............................... 5

PLUS 6 UNITS FROM THE FOLLOWING:
Bio.Sci. 1 General Biology .............................................. 4
Bio.Sci. 10 Introduction to Biology .................................... 3

H.Ed. 1 Standard First Aid/Community CPR ...................... 2
H.Ed. 2 Health Education .............................................. 2
Math. 13 Elementary Statistics ...................................... 4
Nut/Fd. 10 Nutrition .................................................... 3
P.E. 4 Nutrition, Health and Fitness (also Nut./Fd. 4) ......... 3
P.E. 83 Physiology of Fitness .......................................... 3
Physics 2A General Physics .......................................... 4

PLUS 2-3 UNITS FROM THE FOLLOWING THEORY COURSES:
P.E. 82 Sports Officiating ............................................. 2-3
P.E. 84 Care and Prevention of Athletic Injuries ............. 3
P.E. 88 Introduction to Coaching Team Sports ................. 2
P.E. 89A Theory of Baseball ....................................... 2
P.E. 89B Theory of Basketball ...................................... 2
P.E. 89C Theory of Softball ......................................... 3
P.E. 89D Theory of Track & Field .................................. 2
P.E. 89F Theory of Football .......................................... 2

PLUS 1-2 UNITS FROM THE FOLLOWING ACTIVITY COURSES:
P.E. 5 Weight Training ............................................... 5-2
P.E. 7 Aerobic Fitness .................................................. 5-2
P.E. 9 Step Aerobic Training ........................................ 5-2
P.E. 10 Golf ............................................................... 5-2
P.E. 16 Tennis ............................................................ 5-2
P.E. 26 Volleyball ....................................................... 5-2
P.E. 35 Lifeguard Training .......................................... 2
P.E. 36 Fundamental Swimming (Adjustment to Weather) 5-2
P.E. 39 Swimming Conditioning (Adjustment to Weather) 5-2
P.E. 51 Folk, Line, Square, and Modern Ballroom Dance 5-2
P.E. 71 Adaptive Physical Education ............................ 5-2
P.E. 73 Adaptive Aquatics ........................................... 5-2
P.E. 76 Backpacking .................................................... 2
P.E. 77 Beginning Rock Climbing .................................. 2
P.E. 79 Aikido ............................................................. 5-2

TOTAL UNITS REQUIRED: 21-24

PHYSICAL EDUCATION & ATHLETICS COURSES

P.E. 2 EXERCISE ASSESSMENT AND PRESCRIPTION
Units: 3 Transfer: CSU
Advisory: Completion of Nut./Fd. 4 or P.E. 4
Hours: 3 lecture

Course will synthesize the important principles and theories in nutrition, testing, and measurements. The principles will then be applied to physical fitness testing and individualized exercise program design.
P.E. 3 AEROBIC TRAINING WITH FITNESS EQUIPMENT
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Designed to educate students in the areas of aerobic and cardiopulmonary fitness as well as evaluate and improve present aerobic fitness level. Fitness machines will be the main method of exercise. May be taken four times for credit.

P.E. 4 NUTRITION, HEALTH AND FITNESS (ALSO NUT./FD. 4)
Units: 3 Transfer: CSU/UC*
Hours: 4 (2 lecture, 2 activity)
An educational interactive class on nutrition and fitness. Students design a health program for themselves which includes a nutrition eating plan and a fitness program.

P.E. 5 WEIGHT TRAINING
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Progressive resistance exercises with weights to develop muscular strength and endurance. May be taken four times for credit.

P.E. 6 PHYSICAL FITNESS
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Emphasis on developing strength, improving appearance, and increasing cardiovascular efficiency. Provides programs that will develop and maintain sound lifetime habits of fitness. May be taken four times for credit.

P.E. 7 AEROBIC FITNESS
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Designed to provide a wide range of flexibility, muscular strength and endurance, and creative cardiovascular endurance exercises. The course is choreographed to include a warm-up, aerobic segment, floorwork, and warm-down utilizing a variety of calisthenics and dance techniques and skills. May be taken four times for credit.

P.E. 8 AQUAICISE
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Designed to improve muscle tone and cardiovascular fitness. Exercises conducted in the water, utilizing the resistance of water against body movement. Strength and conditioning exercises will be integrated with aerobic exercises so that students may have the potential for maximum benefit in a short time. May be taken four times for credit.

P.E. 9 STEP AEROBIC TRAINING
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
An intense cardiovascular and muscular endurance workout utilizing an adjustable “step” for differing fitness levels choreographed to music to include: warm-up, cardiovascular step segment, floor work and flexibility warm-down. May be taken four times for credit.

P.E. 10 GOLF
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Fundamental skills including use of all clubs. Covers nomenclature, rules, etiquette, and golf course participation. May be taken four times for credit.

P.E. 11 BADMINTON
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Fundamental techniques of service, forehand and backhand strokes. Covers strategy of singles and doubles play, rules, and etiquette. Provides an opportunity for competition. May be taken four times for credit.

P.E. 12 (M) (W) TUMBLING AND GYMNASTICS
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Tumbling and floor exercise, parallel and horizontal bar, side horse and vault for men; uneven parallel bars, balance beam, tumbling and floor exercise, and vault for women. Routine development, safety and spotting techniques. May be taken four times for credit.

P.E. 13 CARDIO KICKBOXING
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
An intense cardiovascular and muscular endurance workout utilizing boxing, calisthenics, Tai Chi, and Chi Gong for differing fitness levels choreographed to music to include: warm-up; cardiovascular kickboxing segment, floor work and cool down. May be taken four times for credit.

P.E. 14 TAI CHI
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Ancient Chinese martial art that promotes health and reduces stress. Emphasizes relaxation, meditation, self-cultivation, and self-defense, inner calm rather than strength. Focus on mind/body harmony through balancing body energy (chi). May be taken four times for credit.
P.E. 15 ARCHERY
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Fundamental skills of archery, including target archery, clout shooting and use and care of equipment. May be taken four times for credit.

P.E. 16 TENNIS
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Fundamental techniques of service, forehand, and backhand. Covers strategy, rules, and etiquette. Provides an opportunity for competition. May be taken four times for credit.

P.E. 24 BOWLING
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Instruction and practice in fundamental techniques of bowling, including equipment selection, stance, delivery, scoring, strategy, and terminology. May be taken four times for credit.

P.E. 25 NORDIC SKIING
Units: 1  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity
Cross-country skiing skills allowing safe, efficient, and enjoyable travel over snow. Emphasis on efficiency of movement, equipment selection and care, basic map reading, personal and group safety, and importance of hydration and appropriate clothing. May be taken four times for credit.

P.E. 26 VOLLEYBALL
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Fundamental skills, rules, and strategy. Primary emphasis on the application of skills and strategy needed to play power volleyball. May be taken four times for credit.

P.E. 27 SOCCER
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Fundamental theory and practice, including passing, dribbling, shooting, formations, and strategy. Primary emphasis on the application of skills, rules, and strategy in game play. May be taken four times for credit.

P.E. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

P.E. 33 RECERTIFICATION FOR LIFEGUARD TRAINING & PROFESSIONAL RESCUE CPR
Units: .5
Prerequisite: Possession of a current Lifeguard Training Certificate
Hours: As scheduled for a total of 18 hours (9 lecture, 9 activity)
Review of Lifeguard Training and CPR for the Professional Rescuer. Leads to recertification of the American Red Cross Lifeguard Training and CPR for the Professional Rescuer certificates upon successful completion of Red Cross requirements. May be taken twice for credit.

P.E. 35 LIFEGUARD TRAINING
Units: 2  Transfer: CSU/UC
Hours: 3 (2 lecture, 1 activity)
Knowledge and skills necessary to keep patrons of aquatic facilities safe in and around water. American Red Cross Lifeguard Training, Waterfront Lifeguarding, Head Lifeguard and CPR for the Professional Rescuer certificates issued upon successful completion of Red Cross requirements.

P.E. 36 FUNDAMENTAL SWIMMING (ADJUSTMENT TO WEATHER)
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 theory and activity per unit
Development of physical and mental adjustment to the water. For nonswimmers through advanced. Basic instruction in swimming, water safety skills, water entry and exit, and water exercises. Instruction and practice in developing aerobic fitness. May be taken four times for credit.

P.E. 39 SWIMMING CONDITIONING (ADJUSTMENT TO WEATHER)
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 theory and activity per unit
Development of muscular and cardiovascular endurance. Instruction in distance training, interval training, water exercise, sprint training, stroke techniques and water games. May be taken four times for credit.
P.E. 40 SPRINGBOARD DIVING (ADJUSTMENT TO WEATHER)  
Units: .5-2 Transfer: CSU/UC*  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Techniques for approach, takeoff, and required and optional dives from the one-meter and three-meter springboards. Covers safety measures, history, and basic diving rules. Stretching and conditioning exercises combined with work on the boards offers a well-rounded conditioning experience. May be taken four times for credit.

P.E. 42 WATER SAFETY INSTRUCTOR/INSTRUCTOR CANDIDATE TRAINING  
Units: 2 Transfer: CSU/UC  
Prerequisite: Possession of a current American Red Cross Swimmer Certificate or equivalent  
Hours: 3 (2 lecture, 1 activity)  
Methods of instruction in aquatic skills to include American Red Cross Water Safety and Swimming courses. American Red Cross Instructor Candidate Training, Community Water Safety, and Water Safety Instructor Certificates issued upon successful completion of Red Cross requirements. May be taken twice for credit.

P.E. 43 SCUBA DIVING  
Units: 1 Transfer: CSU/UC*  
Hours: As scheduled for a total of 36 hours (18 lecture, 18 activity)  
Basic techniques in open water scuba diving. Includes academics, confined water (pool) training and a required two-day field trip to ocean for open water checkout. Upon successful completion student will be certified by PADI or NAUI. Students may take P.E. 43 and P.E. 44 combined a maximum of four times for credit.

P.E. 44 ADVANCED SCUBA  
Units: 2 Transfer: CSU/UC*  
Prerequisite: P.E. 43 or Open Water certification from a recognized certifying agency  
Hours: As scheduled for a total of 45 hours theory and practice  
Advanced techniques in scuba diving. Includes dive planning, underwater navigation, night diving, deep diving, underwater naturalist, scuba equipment and enriched air diving. Requires a two-day field trip to the ocean for the certification dives. Each student will plan and participate in five open water dives. Upon successful completion student will be certified by the Professional Association of Diving Instructors (PADI) as an Advanced Open Water diver and will also receive the Equipment Specialty and Enriched Air Specialty certifications. Students may take P.E. 43 and P.E. 44 combined a maximum of four times for credit.

P.E. 41 FOLK, LINE, SQUARE, AND MODERN BALLROOM DANCE  
Units: .5-2 Transfer: CSU/UC*  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Basic skills in folk, country line, square and modern ballroom dance steps. Includes development of rhythm and history of ethnic dances. May be taken four times for credit.

P.E. 51 SCUBA DIVING  
Units: .5-2 Transfer: CSU/UC*  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Advanced techniques in scuba diving. Includes dive planning, underwater navigation, night diving, deep diving, underwater naturalist, scuba equipment and enriched air diving. Requires a two-day field trip to the ocean for the certification dives. Each student will plan and participate in five open water dives. Upon successful completion student will be certified by the Professional Association of Diving Instructors (PADI) as an Advanced Open Water diver and will also receive the Equipment Specialty and Enriched Air Specialty certifications. Students may take P.E. 43 and P.E. 44 combined a maximum of four times for credit.

P.E. 52 MODERN DANCE  
Units: 1-2 Transfer: CSU/UC  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Development and improvement in body alignment, flexibility, strength endurance, balance coordination, relaxation coordination and modern dance techniques so that the body can be used as an instrument of creative expression. May be taken four times for credit.

P.E. 53 JAZZ DANCE  
Units: 1-2 Transfer: CSU/UC  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Fundamentals of jazz dance with emphasis on ballet basics, flexibility, coordination, weight transference, isolation, floor and barre work, including jazz history, composition basics, stylization, and improvisation. May be taken four times for credit.

P.E. 54 YOGA I  
Units: .5-2 Transfer: CSU/UC*  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Development of basic Yoga postures, breathing practices, stretching, and relaxation techniques as a method to improve flexibility, decrease stress and improve physical and mental well-being. Students may take P.E. 55 and 57 combined a maximum of four times for credit.

P.E. 55 BALLET I (FORMERLY P.E. 56)  
Units: .5-2 Transfer: CSU/UC  
Hours: As scheduled for a total of 36 hours theory and activity per unit  
Introduction to fundamentals of classical ballet focusing on the development of technique through proper alignment, flexibility and strength. Elements of history, terminology and appreciation of ballet as an art form will be explored. Students may take P.E. 56A and 56B combined a maximum of four times for credit.
P.E. 56B BALLET II
Units: .5-2 Transfer: CSU/UC
Advisory: Completion of P.E. 56A or equivalent recommended
Hours: As scheduled for a total of 36 hours theory and activity per unit
A continuation of classical ballet training, exploring elements of ballet history, musicality, terminology, technique, and performance. Pointe technique and character dance will also be presented. Students may take P.E. 56A and 56B combined a maximum of four times for credit.

P.E. 57 DEVELOPING A PERSONAL YOGA PRACTICE
Units: .5-2 Transfer: CSU/UC*
Prerequisite: Completion of P.E. 55 or equivalent
Hours: As scheduled for a total of 36 hours theory and activity per unit
Proficiency in Yoga postures, breathing exercises, and concentration techniques including advanced positions and increased endurance. Students may take P.E. 55 and P.E. 57 a combined maximum of four times for credit.

P.E. 58 CONTEMPORARY HATHA YOGA STYLES
Units: 1.5 Transfer: CSU/UC
Prerequisite: Completion of P.E. 55 and P.E. 57
Hours: 2 (1 lecture, 1 activity)
Designed to explore the many styles of contemporary hatha yoga practice: traditional, continuous, power, and aerobic. Focus on the elements within each style and their link to their philosophical origin. Students required to design and lead a yoga session reflective of each style.

P.E. 59 TEACHING YOGA TO SPECIAL POPULATIONS
Units: 1.5 Transfer: CSU
Prerequisite: Completion of P.E. 55 and P.E. 57
Hours: 2 (1 lecture, 1 activity)
Designed to explore the ways in which the practice of hatha yoga may be adapted to teaching populations with special needs. Students required to create customized sessions taking into account specific given needs.

P.E. 60 INTRODUCTION TO THE YOGA TRADITION
Units: 2
Hours: 2 lecture
Discussion of the traditional principles of Yoga and how its practices have been brought to the West.

P.E. 67 HOW TO TEACH YOGA
Units: 2
Prerequisite: Completion of P.E. 57 and P.E. 68
Hours: 2 lecture
Designed for future yoga teachers. Teaching of techniques, ethics of teaching, teacher/student relationship, and yoga as a vocation.

P.E. 68 INTRODUCTION TO MEDITATION
Units: .5-2 Transfer: CSU
Hours: As scheduled for a total of 36 hours theory and activity per unit
Exploration of the body/mind connection through techniques of visualization, affirmation, concentration and meditation. May be taken four times for credit.

P.E. 70 SWIMMING FITNESS FOR SENIORS
Units: .5-2 Transfer: CSU/UC*
Advisory: Physicians approval recommended for participation
Hours: As scheduled for a total of 36 hours theory and activity per unit
Swimming fitness program based on principles of aerobic training, flexibility and muscle endurance for seniors. May be taken four times for credit.

P.E. 71 ADAPTIVE PHYSICAL EDUCATION
Units: .5-2 Transfer: CSU/UC*
Advisory: Medical clearance for rehabilitation program
Hours: As scheduled for a total of 36 hours theory and activity per unit
An activity course to meet the needs of all handicapped persons involved, giving attention to their emotional, social, and physical drives through group physical activities. May be taken four times for credit.

P.E. 72 INDIVIDUALIZED EXERCISES
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Designed for students having difficulty with ambulation, balance, and/or motor skills. Individualized exercise programs based on the student’s physical abilities, physician's recommendation, and student’s personal goals. May be taken four times for credit.

P.E. 73 ADAPTIVE AQUATICS
Units: .5-2 Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
For physically limited individuals, providing individually prescribed exercises, adaptive and/or modified swimming, and exercises designed to improve cardiovascular endurance. May be taken four times for credit.
P.E. 74 ADAPTIVE AEROBIC FITNESS
Units: .5-2 Transfer: CSU/UC*
Advisory: Physician’s approval recommended for participation
Hours: As scheduled for a total of 36 hours theory and activity per unit
Aerobic fitness training for individuals with disabilities. Emphasis will be on improving individual levels of aerobic fitness through the use of fitness machines. Class activities are adapted and modified to meet individual needs. May be taken four times for credit.

P.E. 75 ADAPTIVE WALK/JOG
Units: 1 Transfer: CSU
Advisory: Physician’s approval recommended for participation
Hours: As scheduled for a total of 36 hours theory and activity
Walking/Jogging for people with permanent or short-term disabilities. Emphasis on walking/jogging techniques, aerobic conditioning, program development, nutrition, proper workout attire and safety. May be taken four times for credit.

P.E. 76 BACKPACKING
Units: 2 Transfer: CSU/UC*
Hours: 3 (1 lecture, 2 activity)
Basics of minimum impact camping and wilderness safety with maximum personal comfort and enjoyment. Emphasizes “leave-no-trace” camping skills, wilderness navigation, shelter use and site selection, menu planning, backcountry cooking, wilderness medicine, clothing and equipment selection, group dynamics and leadership. Two field trips required. May be taken four times for credit.

P.E. 77 BEGINNING ROCK CLIMBING
Units: 2 Transfer: CSU/UC
Hours: 3 (1 lecture, 2 activity)
Covers various aspects of climbing including: how to use rope systems and other climbing gear safely, how to tie and use various knots, belaying techniques, call signals, balance, climbing techniques, footwork, flexibility, and rapelling. May be taken four times for credit.

P.E. 79 AIKIDO
Units: .5-2 Transfer: CSU/UC
Hours: As scheduled for a total of 36 hours theory and activity per unit
Introduction to fundamental principles and techniques of Aikido, a Japanese martial art based on non-aggressive resolution of conflict. Focuses on mind-body connection, harmony and natural movements; effective regardless of size or strength. May be taken four times for credit.

P.E. 81 INTRODUCTION TO PHYSICAL EDUCATION
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Designed for physical education majors and minors. Survey of the basic principles in physical education. Emphasizes the study of one’s own competencies in relation to requirements of the profession.

P.E. 82 SPORTS OFFICiating
Units: 2-3 Transfer: CSU/UC*
Hours: As scheduled for a total 36 lecture hours and 18 laboratory hours (2 units); 54 lecture hours and 27 laboratory hours (3 units)
Officiating team and individual sports. Emphasizes officiating concepts, skills, fundamentals and etiquette of Basketball, Baseball/Softball, Volleyball and Soccer.

P.E. 83 PHYSIOLOGY OF FITNESS
Units: 3 Transfer: CSU/UC*
Hours: 3 lecture
Introduction to physiological adaptations to exercise, with considerations of the bio-physical values of exercise in maintaining fitness throughout an individual’s life span. Designed to teach principles of cardiovascular endurance and proper weight control by engaging students in personal fitness through writing of their own individual programs.

P.E. 84 CARE AND PREVENTION OF ATHLETIC INJURIES
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to athletic training and sports medicine. Topics covered include injury evaluation and rehabilitation, emergency medicine, and taping techniques.

P.E. 85 TECHNIQUES OF FITNESS INSTRUCTION
Units: 3 Transfer: CSU
Hours: 4 (2 lecture, 2 activity)
Method of instruction in leading group exercise in health clubs, resorts, institutions, corporate programs or medically supervised exercise programs. Includes music movement choreography, communication and cueing, practical application of kinesiology and muscle physiology to design class formats in aerobics, step, slide, muscle conditioning, water fitness and walking.

P.E. 86 PSYCHOLOGY OF SPORT
Units: 3 Transfer: CSU
Hours: 3 lecture
Open to all students interested in sport performance issues. Emphasizes individual skills and coaching techniques necessary in the area of sport psychology.
P.E. 87 CROSS TRAINING
Units: 2  Transfer: CSU/UC*
Hours: 3 (1 lecture, 2 activity)
Daily physical fitness training utilizing a variety of training methods including: swim workouts, resistance training, stationary exercise equipment and running (both aerobic and anaerobic). May be taken four times for credit.

P.E. 88 INTRODUCTION TO COACHING TEAM SPORTS
Units: 2  Transfer: CSU/UC*
Hours: 2 lecture
Designed for students interested in coaching team sports. Emphasizes the components of team concepts and the organizational skills needed to implement and conduct a team sport program.

P.E. 89A THEORY OF BASEBALL
Units: 2  Transfer: CSU/UC*
Hours: 2 lecture
Study and analysis of competitive baseball. Emphasis on defense, offense, pitching, baserunning, and team strategy. Designed for students with previous baseball experience and/or the desire to coach baseball at any level.

P.E. 89B THEORY OF BASKETBALL
Units: 2  Transfer: CSU/UC*
Hours: 2 lecture
Study and analysis of competitive basketball. Emphasis on defense, offense, individual and team skill development, rules and games preparation and strategy. Designed for students with previous basketball experience and/or the desire to coach basketball at any level.

P.E. 89C THEORY OF SOFTBALL
Units: 3  Transfer: CSU/UC*
Hours: 3 lecture
Study and analysis of competitive softball. Emphasis on defense, offense, pitching, baserunning, team strategies, stats recording and scorekeeping. Designed for students with softball experience and/or the desire to coach softball at any level.

P.E. 89D THEORY OF TRACK & FIELD
Units: 2  Transfer: CSU/UC*
Hours: 2 lecture
Study and analysis of competitive track and field. Emphasis on each event’s biomechanics, training, and strategies to achieve desired results for the competitor and coach. Designed for students with track and field experience and/or the desire to coach track and field at any level.

P.E. 89F THEORY OF FOOTBALL
Units: 2  Transfer: CSU/UC*
Hours: 2 lecture
Study and analysis of football. Emphasis of defense, offense, special teams and strategies. Designed for students with previous football experience and/or the desire to coach football at any level.

P.E. 93 SPORTS ACTIVITIES
Units: 5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Intra-class competition in group activities such as basketball, flag football, volleyball, and softball. May be taken four times for credit.

P.E. 94 INTRAMURAL ATHLETICS
Units: 5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Organized competition for school championships in a variety of sports. FALL: Flag Football, Volleyball, and Basketball. SPRING: Basketball, Volleyball, and Softball. Individual and dual sports championships also awarded in Badminton, Tennis, Golf, Archery, and a variety of other activities. May be taken four times for credit.

P.E. 96 WATER SAFETY
Units: .5  Transfer: CSU/UC*
Hours: As scheduled for a total of 18 hours theory and activity
Knowledge and skills to prevent and overcome hazardous situations in and near the water. Includes use of self-help and survival techniques, methods of water rescues, personal flotation devices, small craft safety, use of equipment, and spinal injury management.

P.E. 101 FOOTBALL TRAINING
Units: 5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training methods, skills, knowledge, strategy, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club, or tournament activity encouraged to enroll. May be taken four times for credit.

P.E. 102 BASEBALL TRAINING
Units: 5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club, or tournament activity encouraged to enroll. May be taken four times for credit.
P.E. 103 GOLF TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, strategy, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club, or tournament activity encouraged to enroll. May be taken four times for credit.

P.E. 104 TENNIS TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, strategy, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club, or tournament activity are encouraged to enroll. May be taken four times for credit.

P.E. 105 TRACK TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses physical training, skills, knowledge, and appreciation of track and field events. Students preparing for a season of intercollegiate competition are encouraged to enroll. May be taken four times for credit.

P.E. 106 BASKETBALL TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, strategy, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club or tournament activity are encouraged to enroll. Students are allowed to take P.E. 106 and P.E. 109 for a total of four times for credit.

P.E. 107 SWIMMING TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, strategy, and appreciation. Competitive swimming for students preparing for a season of intercollegiate, club, or triathlon activity are encouraged to enroll. May be taken four times for credit.

P.E. 108 WATER POLO TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, strategy, and appreciation for competition. Recommended for students preparing for a season of intercollegiate or A.A.U. Club activity. May be taken four times for credit.

P.E. 109 TEAM BASKETBALL
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Advanced instruction in team play with emphasis on participation at the team level. Techniques of team offense and team defense stressed. NOTE: Students are allowed to take P.E. 109 and P.E. 106 for a total of four times for credit.

P.E. 110 VOLLEYBALL TRAINING
Units: .5-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses training, skills, knowledge, strategy, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club, or tournament activity encouraged to enroll. May be taken four times for credit.

P.E. 111 (W) SOFTBALL TRAINING
Units: 1-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit.
Stresses training, skills, knowledge, strategy, and appreciation. Students preparing for a season of intercollegiate, A.A.U. Club, or tournament activity encouraged to enroll. May be taken four times for credit.

P.E. 112 (M) WRESTLING TRAINING
Units: 1-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Emphasis on training, techniques, knowledge, and appreciation of intercollegiate, freestyle, or tournament wrestling. May be taken four times for credit.

P.E. 113 SKI TRAINING
Units: 1-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Training, skills, knowledge, strategy, and appreciation of ski racing. Students preparing for a season of intercollegiate, USSA, USCSA, or club activity are encouraged to enroll. May be taken four times for credit.

P.E. 114 CHEERLEADING TRAINING
Units: 1-2
Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Includes warm-up, flexibility, strength and conditioning, technical skills and choreography of cheerleading, dance, stunting and tumbling for performance and entertainment. May be taken four times for credit.
P.E. 115 CROSS COUNTRY TRAINING
Units: 1-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and practice per unit
Stresses running training skills, knowledge, strategy, and appreciation. Preparation for competition, intercollegiate, club or tournament level or for personal improvement. May be taken four times for credit.

P.E. 116 SOCCER TRAINING
Units: .5-2  Transfer: CSU/UC*
Hours: As scheduled for a total of 36 hours theory and activity per unit
Stresses technical skills, fitness, knowledge and appreciation of soccer. Students preparing for a season of intercollegiate competition, Select and Elite Soccer Clubs, or United States Soccer Federation (USSF) teams are encouraged to enroll. May be taken four times for credit.

P.E. 122 INTERCOLLEGIATE VOLLEYBALL (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate volleyball competition conducted through the California Commission on Athletics rules. May be taken four times for credit.

P.E. 123 INTERCOLLEGIATE BASKETBALL (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 143
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate basketball competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 124 INTERCOLLEGIATE SOCCER (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate soccer competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 125 INTERCOLLEGIATE SKIING (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 144
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate skiing competition conducted through United States Collegiate Association rules. May be taken four times for credit.

P.E. 126 INTERCOLLEGIATE CROSS COUNTRY (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate cross country competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 127 INTERCOLLEGIATE GOLF (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 162
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate golf competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 131 INTERCOLLEGIATE SOFTBALL (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 161
Hours: As scheduled for a total of 60 hours laboratory per unit
Intercollegiate softball competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 132 INTERCOLLEGIATE TENNIS (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 163
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate tennis competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 133 INTERCOLLEGIATE TRACK (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 164
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate track and field competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 134 INTERCOLLEGIATE SWIMMING (W)
Units: 1-3  Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 165
Hours: As scheduled for a total of 60 hours theory and practice per unit
Intercollegiate swimming and diving competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.
P.E. 137 INTERCOLLEGIATE WATER POLO (W)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for women, men see P.E. 146
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate water polo competition conducted through
NCAA and California Commission on Athletics rules. May
be taken four times for credit.

P.E. 141 INTERCOLLEGIATE CROSS COUNTRY (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 126
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate cross country competition conducted through
NCAA and California Commission on Athletics rules. May
be taken four times for credit.

P.E. 142 INTERCOLLEGIATE FOOTBALL (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate football competition conducted through
NCAA and California Commission on Athletics rules. May
be taken four times for credit.

P.E. 143 INTERCOLLEGIATE BASKETBALL (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 123
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate basketball competition conducted through
NCAA and California Commission on Athletics rules. May
be taken four times for credit.

P.E. 144 INTERCOLLEGIATE SKIING (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 125
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate skiing competition conducted through the
United States Collegiate Ski Association. May be taken four
times for credit.

P.E. 145 INTERCOLLEGIATE WRESTLING (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate wrestling competition conducted through
NCAA and California Commission on Athletics rules. May
be taken four times for credit.

P.E. 146 INTERCOLLEGIATE WATER POLO (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 137
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate water polo competition conducted through
NCAA and California Commission on Athletics rules. May
be taken four times for credit.

P.E. 161 INTERCOLLEGIATE BASEBALL (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 131
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate baseball competition conducted through NCAA
and California Commission on Athletics rules. May be
taken four times for credit.

P.E. 162 INTERCOLLEGIATE GOLF (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 127
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate golf competition conducted through NCAA
and California Commission on Athletics rules. May be
taken four times for credit.

P.E. 163 INTERCOLLEGIATE TENNIS (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 132
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate tennis competition conducted through NCAA
and California Commission on Athletics rules. May be
taken four times for credit.

P.E. 164 INTERCOLLEGIATE TRACK (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 133
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate track and field competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.

P.E. 165 INTERCOLLEGIATE SWIMMING (M)
Units: 1-3 Transfer: CSU/UC*
Advisory: Recommended for men, women see P.E. 134
Hours: As scheduled for a total of 60 hours theory and
practice per unit
Intercollegiate swimming and diving competition conducted through NCAA and California Commission on Athletics rules. May be taken four times for credit.
P.E. 200 FIRE ACADEMY PHYSICAL TRAINING
Units: 2.5  Transfer: CSU
Corequisite: Concurrent enrollment in Fire Tec 100
Hours: As scheduled for a total of 80 hours (28 lecture, 52 laboratory)
Designed for Firefighter Academy Trainees, emphasizing lifetime fitness, principles of physical fitness, individual fitness programs, managing body composition, stress indicators and management, nutrition, and development of muscular strength and cardiovascular efficiency.

P.E. 210 FITNESS FOR PUBLIC SAFETY PERSONNEL
Units: 3  Transfer: CSU
Hours: 5 (1 lecture, 4 activity)
Basic individualized physical fitness assessment and exercise program development for public safety personnel. May be taken four times for credit.

P.E. 300 SELECTED TOPICS IN PHYSICAL EDUCATION
Units: .5-4  Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Physical Science
(SEE EARTH SCIENCE, GEOGRAPHY, GEOLOGY, PHYSICS)

Physics

SCIENCES & MATHEMATICS
DEAN: Karen Walters Dunlap
ASSOCIATE DEAN: Vacant
DIVISION OFFICE: Ht 4
FACTORY: D. Calabrese, D. Harris, M. Sequeira
LIAISON COUNSELORS: K. Parker, C. West

The Physics Department offers coursework satisfying the needs of students wishing to transfer to four-year colleges and other institutions for further study in science and engineering. Those students wishing a basic background in Physics for study in the many fields based upon science and careers in teaching, medicine, agriculture and other sciences will also find coursework.

TRANSFER MAJOR REQUIREMENTS in Physics are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Positions for which four-year graduates in Physics are qualified are in research, teaching, engineering, medicine and industry.

PHYSICS—A.S. DEGREE
The Physics major recognizes a concentration in the field of Physics. Successful completion of the curriculum in Physics and the associated electives prepare Physics students for transfer to four-year colleges or universities. Students must fulfill major requirements and all Associate Degree Requirements for the A.S. degree, see pages 42-43. Courses used to satisfy this major may not be used to satisfy General Education Requirements.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>Physics 4A Principles of Physics: Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>Physics 4B Principles of Physics: Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>Physics 4C Principles of Physics: Waves, Light, Heat, Sound, Modern Physics</td>
<td>4</td>
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</table>

PLUS 3 COURSES FROM:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Math. 30 Analytical Geometry and Calculus</td>
<td>4-5</td>
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<tr>
<td>Math. 31 Analytical Geometry and Calculus</td>
<td>4</td>
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<tr>
<td>Math. 32 Analytical Geometry and Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Math. 33 Differential Equations and Linear Algebra</td>
<td>6</td>
</tr>
</tbody>
</table>

TOTAL UNITS REQUIRED: 24-25
Recommended Electives: Chemistry 1B, 5; Engineering 17, 17L, 35, 45; C.I.S. 50, 60, 70, 80, 90
PHYSICS COURSES

PHYSICS A FOUNDATIONS OF COLLEGE PHYSICS
Units: 3
Prerequisite: Completion of Math. D or equivalent with a grade of “C” or better
Advisory: Completion of Math. 8 or equivalent and completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
Intended to prepare students for Physics 2A and 4A. Focuses on measurement, relevant mathematical concepts, problem-solving, and a variety of concepts in physics.

PHYSICS 2A GENERAL PHYSICS
Units: 4
Prerequisite: Completion of high school trigonometry or equivalent
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Noncalculus introduction to the principles of mechanics, properties of matter, heat, waves, and sound. Emphasis on applications relevant to several majors, including premedical, predental, optometry, forestry, architecture, and biological science. (CAN PHYS 2) (With Physics 2B, CAN PHYS SEQ A)

PHYSICS 2B GENERAL PHYSICS
Units: 4
Prerequisite: Completion of Physics 2A or equivalent
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Noncalculus introduction to the principles of light, electricity, magnetism, and modern physics. Emphasis on applications relevant to several majors, including premedical, predental, optometry, forestry, architecture, and biological science. (CAN PHYS 4) (With Physics 2A, CAN PHYS SEQ A)

PHYSICS 2X PHYSICS 2A PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Physics 2A
Hours: 1 lecture
Optional problem solving course to accompany Physics 2A. May be taken once for credit.

PHYSICS 2Y PHYSICS 2B PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Physics 2B
Hours: 1 lecture
Optional problem solving course to accompany Physics 2B. May be taken once for credit.

PHYSICS 4A PRINCIPLES OF PHYSICS: MECHANICS
Units: 4
Prerequisite: Completion of Physics A or equivalent, and Math. 30 and Math 31 (Math. 31 may be taken concurrently)
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Calculus-based introduction to the principles of kinematics, dynamics, energy, momentum, rotational motion, and oscillatory motion. The 4A–B–C sequence presents the general principles and analytical methods used in physics for physical science and engineering majors. (CAN PHYS 8) (With Physics 4B & 4C, CAN PHYS SEQ B)

PHYSICS 4B PRINCIPLES OF PHYSICS: ELECTRICITY AND MAGNETISM
Units: 4
Prerequisite: Completion of Physics 4A
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Maxwell’s Equations, AC and DC circuits, electromagnetic waves, and magnetic properties of matter. The 4A–B–C sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (CAN PHYS 12) (With Physics 4A & 4C, CAN PHYS SEQ B)

PHYSICS 4C PRINCIPLES OF PHYSICS: WAVES, LIGHT, HEAT, SOUND, MODERN PHYSICS
Units: 4
Prerequisite: Completion of Physics 4A
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 6 (3 lecture, 3 laboratory)
Thermodynamics, kinetic theory of gases, waves, geometrical and physical optics, sound, special relativity, quantum mechanics, atoms. The 4A–B–C sequence presents general principles and analytical methods used in physics for physical science and engineering majors. (CAN PHYS 14) (With Physics 4A & 4B, CAN PHYS SEQ B)

PHYSICS 4X PHYSICS 4A PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Physics 4A
Hours: 1 lecture
Optional problem solving course to accompany Physics 4A. May be taken once for credit.

PHYSICS 4Y PHYSICS 4B PROBLEM SOLVING
Units: 1
Corequisite: Concurrent enrollment in Physics 4B
Hours: 1 lecture
Optional problem solving course to accompany Physics 4B. May be taken once for credit.
PHYSICS 4Z PHYSICS 4C PROBLEM SOLVING
Units: 1 Transfer: CSU
Corequisite: Concurrent enrollment in Physics 4C
Hours: 1 lecture
Optional problem solving course to accompany Physics 4C. May be taken once for credit.

PHYSICS 7 PRINCIPLES OF PHYSICS
Units: 3 Transfer: CSU/UC*
Prerequisite: Completion of Math. D or equivalent
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 5 (2 lecture, 3 laboratory)
Quantitative introduction to the concepts of motion, force, matter and energy. Emphasizes both conceptual and quantitative solutions to physics problems. Intended for liberal studies majors.

PHYSICS 10 BASIC CONCEPTS IN PHYSICS
Units: 3 Transfer: CSU/UC*
Prerequisite: Completion of high school algebra or equivalent
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 lecture
Introduction to the laws of motion, properties of matter, heat, sound, electricity, magnetism, light, atomic and nuclear physics, and relativity. Emphasis is on familiar phenomena in everyday life. Intended for nonscience majors.

PHYSICS 11 PHYSICAL SCIENCE LABORATORY (ALSO CHEM. 11)
Units: 1 Transfer: CSU/UC*
Prerequisite: Completion of or concurrent enrollment in Physics 10 or Chem. 10
Advisory: Completion of English 50, or eligibility for English 11, or equivalent strongly recommended
Hours: 3 laboratory
A laboratory course designed to provide a variety of individual experiences with basic scientific concepts and their applications. Continually addresses the question, “Why are things the way they are?”

PHYSICS 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

Political Science

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: M. Deaver, W. Jackson
liaison COUNSELORS: K. Bray, S. Muraki

The Political Science curriculum is designed to instruct students in the study of society as it relates to the political formation of values, myths and folkways, as well as to describe the way in which political systems function in the realm of power confrontation and decision making abilities.

TRANSFER MAJOR REQUIREMENTS in Political Science are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and Counseling Center. Positions for which four-year graduates in Political Science are qualified include President, Vice-President, U.S. Senate, Senators and Assemblyman, County and City management areas, as well as other areas of Public Administration.

POLITICAL SCIENCE COURSES

POL.SCI. 1 AMERICAN GOVERNMENT
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to the principles and problems of the American political system on the national, state, and local levels. Course includes a discussion of the Constitution, political parties, the executive, legislative, and judicial branches of the government. Other topics include political behavior, voting patterns, interest group interaction, decision and conflict roles within the system. Meets one half of “U.S. History, Constitution and American Ideals” requirement for California State University with either History 17A, 17B, or 27. (CAN GOVT 2)

POL.SCI. 2 COMPARATIVE GOVERNMENT
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Compares the major political systems of selected countries of the world, both Autocratic and Democratic. Particular emphasis is placed on advanced industrial democracies. Comparison includes the origins and development of governments, their constitutional principles, political ideologies, institutions, parties, and social policies.

POL.SCI. 3 INTERNATIONAL RELATIONS
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to the political relations between governments and other global actors. Examination of theories and concepts that help to explain conflict and cooperation in a range of issue areas.
POL.SCI. 4 RUSSIAN AND EAST EUROPEAN POLITICAL SYSTEMS
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
A comparison of Russian government and politics with that of other Eastern European states. Discussion of the past imperial and communist systems. Focus on social and political actors, decision-making institutions and the issues they deal with.

POL.SCI. 7 POLITICS OF THE DEVELOPING WORLD—THIRD WORLD POLITICS
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of revolution and political changes of selected countries in the Developing World/Global South focusing on historical experiences of European and American imperialism and colonialism. Major emphasis on popular movements of self-determination and conflicts between traditional indigenous values and non-traditional Western ideology. Contemporary case studies include Latin America, Africa, and Asia.

POL.SCI. 8 AMERICAN FOREIGN POLICY
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Overview of American diplomatic history and the politics of foreign policy formation and implementation. Survey of contemporary issues confronting the U.S.

POL.SCI. 9 POLITICS OF THE MIDDLE EAST
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
An introduction to the politics and political systems of the Middle East. Focuses on the influence of colonialism, nationalism and Islam on forms of government, social turmoil and international conflicts.

POL.SCI. 12 TERRORISM
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Overview of terrorism, including history, motives, and political impact. Implications of counterterrorism policies.

POL.SCI. 15 MODEL UNITED NATIONS
Units: 3 Transfer: CSU
Hours: 3 lecture
Organization, functions and decision making of the United Nations. Simulations of various bodies of the UN.

POL.SCI. 16 INTRODUCTION TO POLITICAL THEORY
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Survey of ideologies relevant to contemporary government and politics. Focus on understanding many different sets of ideas motivating and legitimating political processes. Deliberate examination of values underlying arguments and institutions, permitting a critical examination of key theories and concepts.

POL.SCI. 27 WOMEN AND POLITICS IN A GLOBAL SOCIETY
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Exploration of past and current influences on the political and legal status of women as well as women's participation in the political process throughout the world. Includes political theory and strategy as it relates to women.

POL.SCI. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

POL.SCI. 300 SELECTED TOPICS IN POLITICAL SCIENCE
Units: .5-4 Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Psychology

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: R. Elliott, W. Hardy, K. Taylor, S. Verma, D. Yoshizumi
LIAISON COUNSELORS: R. Elliott, B. Hawkes, N. Martinis, S. Muraki

Psychology is the scientific discipline concerned with the study of behavior. Courses are designed to give students academic preparation in several areas of Psychology while concurrently providing material that can be usefully applied to their own lives.

TRANSFER MAJOR REQUIREMENTS in Psychology are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Four-year graduates in Psychology qualify for careers in probation, juvenile counseling, rehabilitation, and several other fields in the private sector and in government agencies that relate to the helping services.

PSYCHOLOGY COURSES

PSYCH. 1 INTRODUCTION TO PSYCHOLOGY
Units: 3
Transfer: CSU/UC
Hours: 3 lecture
An introduction to the general principles of psychology, concentrating on brain functions, sensation and perception, consciousness, learning, memory, motivation and emotion. Selected additional topics may be covered. Required for psychology majors. (CAN PSY 2)

PSYCH. 2 INTRODUCTION TO PSYCHOLOGY: SOCIAL PROCESSES
Units: 3
Transfer: CSU/UC
Hours: 3 lecture
An extension of the basic concepts developed in Psychology 1. Examination of complex social processes such as personality formation, response to stress, psychological breakdown, and group behavior. Psychology 2 is recommended for students planning to major in psychology or related fields.

PSYCH. 3 SOCIAL PSYCHOLOGY
Units: 3
Transfer: CSU/UC
Hours: 3 lecture
Study of human interaction with emphasis on the individual within a social context. Topics include development of the self, social perception, interpersonal attraction, prejudice and discrimination, attitude change, moral development, altruism, aggression, social influence, power and leadership, and interaction in groups are explored.

PSYCH. 4 DEVELOPMENTAL PSYCHOLOGY
Units: 3
Transfer: CSU/UC
Advisory: Completion of Psych. 1 recommended
Hours: 3 lecture
An overview of development from conception to adolescence. Includes identity development, nature versus nurture, bonding, socialization, child abuse, adjustment, and family structures. Examines psychological theories that apply to children and adolescents. A multicultural and multiethnic approach is stressed and the differences in child parent interaction are explored in these contexts.

PSYCH. 5 EXPERIMENTAL PSYCHOLOGY
Units: 3
Transfer: CSU/UC
Prerequisite: Completion of Psychology 1 and completion or concurrent enrollment in Psychology 42
Hours: 5 (2 lecture, 3 laboratory)
Introduction to research methodology, experimental design and hypothesis testing in the behavioral sciences, including the execution, evaluation and reporting of individual research projects.

PSYCH. 6 PSYCHOLOGY OF ADJUSTMENT
Units: 3
Transfer: CSU/UC
Hours: 3 lecture
Basic theories of personal and social adjustment. Use of psychological principles and methods in adapting to the challenges of life. Topics include self image and self esteem, interpersonal relations, stress management, mental health, and illness and approaches to personal growth.

PSYCH. 7 ABNORMAL PSYCHOLOGY
Units: 3
Transfer: CSU/UC
Advisory: Completion of Psychology 1 recommended
Hours: 3 lecture
Introduction to descriptive psychopathology: the origin, nature, and treatment of psychological and behavioral disorders, including discussion of relevant ethical and diagnostic issues. Major topics will include schizophrenia, anxiety-related disorders, compulsive sexual behavior, and conflicting “models of madness.”

PSYCH. 8 PSYCHOLOGY OF DEATH AND DYING
Units: 3
Transfer: CSU
Hours: 3 lecture
An investigation of beliefs, attitudes, and behaviors associated with death, dying and bereavement. Terminal illness, suicide, euthanasia, last rites, legal aspects, death anxiety, cross-cultural beliefs and various philosophical views on the phenomenon of death are explored.
PSYCH. 10 PSYCHOLOGY OF MARRIAGE
(ALSO HUM.DEV. 21)
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of the meaning and function of intimacy, marriage, and family in today’s American society. Consideration given to nature of commitments, sexuality, alternative relationships, communication, conflict resolution, economics, parenting, crises, and marital separation, through the life span, and encompassing a diverse range of individuals. Recommended for majors in Human Development and Family and for those in human service careers.

PSYCH. 12 CONTEMPORARY PSYCHOLOGY
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Psych. 1
Hours: 3 lecture
Designed primarily for psychology majors. Includes a broad range of topics related to current issues in psychology. Content of course will vary as research emphasis of discipline shifts and current issues change.

PSYCH. 15 THINKING AND PROBLEM SOLVING
Units: 3 Transfer: CSU
Hours: 3 lecture
Research-based analysis of the psychology of everyday thinking. Major topics include problem solving, decision making, expertise, learning, memory, and heuristics and biases.

PSYCH. 27 PSYCHOLOGY OF WOMEN
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Study of the psychological effects of society upon women including biology, culture, social processes, and personality. Emphasis will be placed on what it means to grow-up female in different contexts with particular emphasis on the effects of culture, class, and ethnicity.

PSYCH. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

PSYCH. 30 HUMAN SEXUALITY
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
An overview of human sexuality from birth through adulthood: historical, religious, cultural, physiological, sociological, and legal points of view.

PSYCH. 40 INTRODUCTION TO BIOPSYCHOLOGY
Units: 3 Transfer: CSU/UC
Advisory: Completion of Psych. 1 recommended
Hours: 3 lecture
Basic introduction to the relationship of the central and peripheral nervous system to behavior, including such topics as sex, aggression, sleep, attention, learning, and memory. Emphasis is placed on role of neurotransmitter systems and on structure/function relationships.

PSYCH. 40L BIOPSYCHOLOGY LABORATORY
Units: 1 Transfer: CSU/UC
Corequisite: Completion of or concurrent enrollment in Psych. 40
Hours: 3 laboratory
Study of methods and techniques used to investigate sensation, perception, psychophysics, and biological psychology. Topics include the organization of the brain, anatomy and physiology of the neuron, methods and an examination of sensory systems.

PSYCH. 42 INTRODUCTION TO PSYCHOLOGICAL STATISTICS
Units: 3 Transfer: CSU/UC
Prerequisite: Completion of Math. D or equivalent
Hours: 3 lecture
Statistical procedures used for experimental analysis in the social and behavioral sciences. Descriptive and correlational statistics, parametric and nonparametric inference tests, and current controversies in hypothesis testing.

PSYCH. 50 ALCOHOL-DRUGS AND SOCIETY
Units: 3 Transfer: CSU
Hours: 3 lecture
Covers alcohol and drug use in society today. Includes alcohol and drug use habits; history of alcohol and drug use; and relationships between alcohol/drugs and socio-economic status, economic disadvantage, the elderly, youth, social forces, and the sexes.

PSYCH. 60 PSYCHOLOGY AND FILM
Units: 3 Transfer: CSU
Hours: 3 lecture
Analysis of a selection of contemporary films that have played a critical role in shaping and reflecting cultural assumptions and fears. Emphasis on abnormal mental states and processes, social psychology, substance abuse, and ethics. Viewing of films, reading from psychology and psycholinguistics, and discussion included. Films will vary with each offering.
REAL ESTATE—
A.A. OR A.S. DEGREE OR CERTIFICATE
The curriculum in Real Estate helps qualify students for positions as real estate brokers, real estate salespersons, real estate loan brokers, property managers, and escrow officers. Students must fulfill major requirements and all Associate Degree Requirements for the A.A./A.S. degree, see pages 42-43. A certificate is designed to provide vocational skills; it is not equivalent to an A.A. or A.S. degree.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.E. 74</td>
<td>Real Estate Principles</td>
<td>3</td>
</tr>
<tr>
<td>R.E. 75</td>
<td>Real Estate Practice</td>
<td>3</td>
</tr>
<tr>
<td>R.E. 76</td>
<td>Legal Aspects of Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>R.E. 77</td>
<td>Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>R.E. 78</td>
<td>Real Estate Economics</td>
<td>3</td>
</tr>
<tr>
<td>R.E. 79</td>
<td>Real Estate Appraisal</td>
<td>3</td>
</tr>
</tbody>
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PLUS 3 ADDITIONAL UNITS FROM:

- Business A Elements of Accounting
- Business 1 Financial Accounting I.
- Business 20 Introduction to Business
- Business 85 Introduction to Oral Communication
- Business 100 Management Concepts and Applications
- Business 102 Management Communications
- Business 120 Introduction to Marketing
- Business 124 Selling Dynamics
- C.I.S. 50 Applying Computer Software
- C.S. 10 Introduction to Computing
- R.E. 81 Escrow Principles
- R.E. 82 Real Estate Foreclosures: Debtors’ Rights, Creditors’ Remedies

TOTAL UNITS REQUIRED: 21

REAL ESTATE COURSES

R.E. 74 REAL ESTATE PRINCIPLES

- Units: 3
- Transfer: CSU
- Hours: 3 lecture

Fundamental real estate course covering laws and principles of California real estate; gives understanding, background, and terminology necessary for advanced study in specialized courses. Helpful to those preparing for the real estate salesperson license examination.

R.E. 75 REAL ESTATE PRACTICE

- Units: 3
- Transfer: CSU
- Advisory: Completion of R.E. 74 or equivalent
- Hours: 3 lecture

Day-to-day operations in real estate, including listing, prospecting, advertising, financing, sales techniques, escrow, and ethics.
R.E. 76 LEGAL ASPECTS OF REAL ESTATE
Units: 3  Transfer: CSU
Advisory: Completion of R.E. 74 or equivalent
Hours: 3 lecture
Study of the practical aspects of California real estate law, including sources of law government regulation, property ownership divisions, transfer, title, contracts, escrow, and landlord/tenant relationships.

R.E. 77 REAL ESTATE FINANCE
Units: 3  Transfer: CSU
Advisory: Completion of R.E. 74 or equivalent recommended
Hours: 3 lecture
Introduction to real estate financing, including the necessary steps involved in the financing process, types of lenders and loans, qualifying the property and the buyer, and problems in financing transactions.

R.E. 78 REAL ESTATE ECONOMICS
Units: 3  Transfer: CSU
Advisory: Completion of R.E. 74 or equivalent recommended
Hours: 3 lecture
Introduction to the economic forces that shape and affect real estate market activities and values. Includes business and real estate cycles; regional, community, and neighborhood growth patterns; residential, commercial, and industrial markets; rural and recreational markets; property taxes; and real estate investments.

R.E. 79 REAL ESTATE APPRAISAL
Units: 3  Transfer: CSU
Hours: 3 lecture
Introductory course covering the purposes of appraisals, appraiser licensing, appraiser regulations, and approaches to value. General and specific information on the valuation process. Emphasis on residential single-unit, planned unit development, small income property, and condominium properties. Meets Office of Real Estate Appraisers criteria for basic education except the Uniform Standards of Professional Appraisal Practice.

R.E. 81 ESCROW PRINCIPLES (FORMERLY R.E. 310)
Units: 3  Transfer: CSU
Hours: 3 lecture
Principles, practices, and procedures utilized for escrows associated with transfer of real property, clearing of liens and encumbrances. Coverage includes buy-sell, refinance, exchange, and bulk transfer escrows. Focus includes loan payoffs, prorations, instruction preparation, and escrow closings. Approved by California Department of Real Estate (DRE) for credit toward required coursework for California real estate broker examination, and for one of two courses required for DRE salesperson license in addition to Real Estate Principles (R.E. 74).

R.E. 82 REAL ESTATE FORECLOSURES: DEBTORS’ RIGHTS, CREDITORS’ REMEDIES (FORMERLY R.E. 311)
Units: 3  Transfer: CSU
Hours: 3 lecture
Principles and practices involved in judicial and non-judicial foreclosure process. Focuses on real estate secured creditor remedies associated with debt collection and associated debtor rights. Includes foreclosure alternatives, potential third party opportunities, and importance of borrower-lender communications as key step for avoidance of foreclosure action.

R.E. 95 INTERNSHIP IN REAL ESTATE
Units: .5-4  Transfer: CSU*
Corequisite: Must be concurrently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships.
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of real estate sales, real estate lending, real estate appraisal, title company practices, escrow company practices, or other real estate functions. Provides new on-the-job technical training under the direction of a worksite supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

R.E. 300 SELECTED TOPICS IN REAL ESTATE
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Recreation Management

HEALTH, PHYSICAL EDUCATION, RECREATION/ATHLETICS
DEAN: John Volek
DIVISION OFFICE: Ft
FACULTY: M. Conway, M. DeVol, J. Forkum
LIAISON COUNSELORS: S. Muraki, V. Rogers

TRANSFER MAJOR REQUIREMENTS in Recreation are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements.

Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center. Four-year graduates in Recreation qualify for employment in private industry and recreational agencies.

RECREATION MANAGEMENT COURSES

REC.MGT. 10 FOUNDATIONS OF RECREATION, TOURISM AND RESORT MANAGEMENT
Units: 3  Transfer: CSU
Hours: 3 lecture
A foundation course focusing on the history, nature, scope and social aspects of leisure services in Western cultures. Includes philosophical and ethical issues as well as exploration of possible career paths.

REC.MGT. 20 PROGRAM PLANNING AND EVENT MANAGEMENT
Units: 3  Transfer: CSU
Hours: 3 lecture
Theory, delivery systems and processes of program planning, implementation, and evaluation as applicable to a variety of both public and private agencies. Addresses a variety of programs that serve different age groups, interests and needs within a range of environments. Leadership for both professionals and volunteers will be presented in terms of their relationship to the human services field.

REC.MGT. 30 LEADERSHIP IN RECREATION, TOURISM, AND RESORT MANAGEMENT
Units: 3  Transfer: CSU
Hours: 3 lecture
Leadership of recreation activities with emphasis on the social development and integration of individuals into group programs, mechanics of planning, techniques of presentation and a repertoire of social activities as tools of social recreation.

REC.MGT. 40 LEISURE ASPECTS OF THE HOSPITALITY INDUSTRY
Units: 3  Transfer: CSU
Hours: 3 lecture
Overview of structure and financial performances of the hospitality industry; food and lodging, resorts, tourism enterprises, attractions, and related operations. Focus on orientation on customer service, cultural/economic trends, and career opportunities.

REC.MGT. 95 INTERNSHIP IN RECREATION, TOURISM AND RESORT MANAGEMENT
Units: .5-4  Transfer: CSU
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for fall and spring semester internships, or at least one other course for summer internships
Designed for advanced students to work in an area related to their educational or occupational goal. Internships may be in the areas of recreational facilities, hotels, resorts, golf courses or other related fields. Provides new on-the-job technical training under the direction of a worksite supervisor that allows the student to expand his or her knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

Registered Nursing
(SEE NURSING)

Skill Development

LIBRARY/LEARNING RESOURCE CENTER
DEAN: Brian Haley
DIVISION OFFICE: LRC 311
FACULTY: N. Cook

Skill Development classes are offered through the Learning Resource Center. Skl.Dev. 21A is a one-unit course which is part of the tutor training qualifications. Skl.Dev. 801 is a non-credit course that provides tutoring or learning assistance to students in all disciplines. All students who use tutoring or learning assistance will enroll in Skl.Dev. 801 Supervised Tutorials.
SKILL DEVELOPMENT COURSES

SKL.DEV. 21A INTRODUCTION TO TECHNIQUES OF TUTORING I
Units: 1  Transfer: CSU
Advisory: Eligibility for English 1A recommended; reading proficiency as demonstrated by matriculation assessment process or completion of English 50 with a grade of “C” or better recommended
Hours: As scheduled for a total of 18 lecture hours
Introduction to learning theories, styles, and techniques as related to tutoring. Fundamentals of communication principles for effective tutoring. Basic diagnostic and evaluative skills of student progress during tutor sessions. Key factors of tutor plans, session preparation, and session structures.

SKL.DEV. 28 INDEPENDENT STUDY
Units: 1-3  Transfer: CSU
Designed for students interested in furthering their knowledge, at an independent study level, in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, research projects. May be taken four times for credit. See Independent Study page in catalog.

SKL.DEV. 300 SELECTED TOPICS IN SKILL DEVELOPMENT
Units: .5-4  Transfer: CSU
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

SKL.DEV. 400 SELECTED TOPICS IN SKILL DEVELOPMENT
Units: .5-4
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

SKL.DEV. 554 DEVELOPING LEARNING SKILLS
Units: .5-4 (Non-Degree Credit)
Advisory: Placement by counseling and/or diagnosis recommended by demonstrating need on the assessment test
Hours: 2 laboratory per unit
Designed to assist students in developing foundation skills necessary for successful completion of regular college work. May include basic grammar, reading improvement, spelling, vocabulary, study skills or other related learning skills. May be repeated for a maximum of 8 units. (Credit/No Credit Grading)

SKL.DEV. 575 COLLEGE VOCABULARY SKILLS I
Units: 3 (Non-Degree Credit)
Advisory: Eligibility for Reading 570 or permission of instructor recommended
Hours: 3 lecture
An introductory vocabulary course designed to improve students’ receptive and expressive vocabulary for college study. Includes dictionary use, pronunciation, usage, etymology, use of context clues, roots and affixes, synonyms, and content-area vocabulary.

SKL.DEV. 801 SUPERVISED TUTORIALS
Units: 0 (No Credit)
Designed to assist students who desire supplemental tutoring or learning assistance in basic skills or academic college-level subjects. Tutorials or learning assistance, or both, are recommended by counselors or instructors for the purpose of developing or augmenting learning by students. Tutorial or learning assistance content is based on student need. Use of tutorial or learning assistance services enrolls students in this non-fee, non-credit course, and does not substitute for any other course or coursework. May be repeated.

Social Science

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: S. McDonald
liaison COUNSELORS: N. Martinis, S. Muraki

The Social Science curriculum is a mixture of survey courses and interdisciplinary studies. The courses vary in their subject matter. Students who major in Social Science generally do so in order to prepare themselves for graduate training in a variety of fields.

TRANSFER MAJOR REQUIREMENTS in Social Science are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

Positions for which four-year graduates in Social Science are qualified include: civil service entry level management, entry into teacher training, entry into law school, entry into professional social work training, and entry-level work in social service agencies.

SOCIAL SCIENCE—A.A. DEGREE
The Social Science degree is designed for students who are pursuing transfer majors in the social sciences, including Anthropology, Human Development, Economics, Sociology, History, Political Science, and related disciplines. To complete this
major, students complete 18 units from the current Sierra College Associate Degree General Education list, in Category B: Social/Behavioral Sciences. These courses must be in addition to those taken to fulfill Sierra’s General Education requirements. See pages 42-43.

SOCIAL SCIENCE COURSES

SOC.SCI. 10 INTRODUCTION TO ETHNIC STUDIES
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to the diverse cultural, social, economic, historical, and political issues relating to the past and present life circumstances of Asian Americans, African Americans, Hispanic Americans, Native Americans, and other “old” and “new” immigrants. Topics will also include majority-minority relations, implications of racism, and intergroup relations.

SOC.SCI. 13 DIALOGUES IN AMERICAN CULTURE
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Exploration of the rich diversity of people, cultures, and opportunities within America, emphasizing theoretical and practical understanding of diversity. Employing a wide range of perspectives from disciplines such as art, literature, psychology, sociology, philosophy, history and biology. The lecture-discussions and films explore topics including ethnicity, aging, (dis)ability, social class, gender, sexual orientation, religion, race, identity, politics and science.

SOC.SCI. 20 AFRICAN AMERICAN CULTURE AND EXPERIENCE
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to multicultural studies focusing on African American culture and experience in the United States. Places the African American experience at the center of the discourse and incorporates methodology from other disciplines that serve as a foundation for integrative and comparative perspectives. A critical examination of the African American experience and its antecedents.

SOC.SCI. 21 INTRODUCTION TO COMMUNITY RESOURCES—SAN FRANCISCO
Units: 2 Transfer: CSU
Hours: As scheduled for a total of 52 hours (20 lecture, 32 activity)
Interdisciplinary, intensive four-day fieldwork in San Francisco; examining social, political, economic, ethnic and cultural issues in urban communities. Interaction with individuals and community agencies who provide services that address the range of human service, educational and social needs in the city. Fee, advance registration, orientation/pre-trip and post-trip debriefing seminar required.

SOC.SCI. 25 MEXICAN AMERICAN/LATINO CULTURE AND IMAGE
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to Mexican American/Chicano/Latino culture using a comparative and interdisciplinary approach with focus on representation in media and popular culture. Course designed to provide an awareness of social, political, economic and cultural aspects of Mexican American, Chicano and Latino life in United States inclusive of social movements and protests.

SOC.SCI. 28 INDEPENDENT STUDY
Units: 1-3 Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

SOC.SCI. 30 IMMIGRATION, COMMUNITY AND CULTURE: THE ASIAN AMERICAN EXPERIENCE
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Introduction to Asian American cultures in the United States from mid-1800’s to present using a comparative and interdisciplinary approach. Examination of the development and evolution of Chinese, Filipino, Asian Indians, Japanese, Korean and Vietnamese communities within the context of social, historical, economic, and political forces within the United States. Topics include immigration and settlement issues, social movements, assimilation, media images, stereotypes and discrimination, community building, art and popular culture.

SOC.SCI. 35 IMMIGRANTS AND REFUGEES IN AMERICA: THE EUROPEAN EXPERIENCE
Units: 3 Transfer: CSU/UC
Hours: 3 lecture
Survey of immigration, acculturation, assimilation and cultures of peoples from northern, western, southern, eastern and central Europe. Includes an overview pre-immigration, immigration and post-immigration experiences of the people from these groups to the United States.

SOC.SCI. 300 SELECTED TOPICS IN SOCIAL SCIENCE
Units: .5-4 Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Sociology

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: R. Alman
LIAISON COUNSELORS: R. Elliott, B. Hawkes

Sociology is a disciplined quest for the understanding of human behavior—particularly in urban, industrial society. Through a systematic analysis of society, its groups, institutions and processes, sociologists hope to better understand and predict human behavior. The introductory course provides a foundation in sociological concepts, with the goal of having students acquire the perspective in sociology and the ability to see their personal position in a societal context. Other sociology courses focus on social problems, race, and ethnic relations and the family.

TRANSFER REQUIREMENTS in Sociology are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.

Positions for which four-year graduates in Sociology are qualified include, but are not confined to, research, social work, personnel, and corrections/probation work.

SOCIOLOGY COURSES

SOC. 1 INTRODUCTION TO SOCIOLOGY
Units: 3
Transfer: CSU/UC
Hours: 3 lecture
A systematic introduction to sociological analysis of social behavior through concepts which include culture, social organization and disorganization, collective behavior, institutionalization, stratification, and socialization. (CAN SOC 2)

SOC. 2 SOCIAL PROBLEMS
Units: 3
Transfer: CSU/UC
Advisory: Completion of Soc. 1 recommended
Hours: 3 lecture
A sociological approach to the study of major American social problems. Emphasizes the critical approach to the questions of social problems. A seminar emphasizing the institutional basis of major social problems. (CAN SOC 4)

SOC. 4 THE FAMILY (ALSO HUM.DEV. 22)
Units: 3
Transfer: CSU
Advisory: Completion of Soc. 1 recommended
Hours: 3 lecture
A sociological approach to the analysis of the family as a social institution. This course will survey family structures of other cultures as well as investigate the relationship of the American family to American society. Of particular interest will be the relationships of the family institution to current changes, stresses, conflicts, and disorganization in the rest of American society.

SOC. 28 INDEPENDENT STUDY
Units: 1-3
Transfer: CSU/UC*
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

SOC. 300 SELECTED TOPICS IN SOCIOLOGY
Units: .5-4
Transfer: CSU/UC*
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat "300" courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

Spanish

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
FACULTY: B. Gudz, C. Sabin
LIAISON COUNSELORS: D. Quadros, V. Skeels

The active part that the United States is now taking in world affairs makes it desirable that a greater number of Americans than ever before have a knowledge of foreign languages and cultures. A language background should be of intrinsic value. The acquisition of desired practical communication skills in the study of a modern foreign language is the primary objective. This can be accomplished by the oral approach, motivated by lectures, and implemented by the language laboratory.

TRANSFER MAJOR REQUIREMENTS in Foreign Language are available in the Counseling Center. Students should consult a counselor and the appropriate college catalog for other transfer requirements. Catalogs of California and out-of-state colleges are located in the Library and the Counseling Center.
Positions for which four-year graduates in Foreign Languages are qualified are in teaching, business, foreign service, law enforcement, nursing, secretarial, and diplomatic services.

**SPANISH COURSES**

**SPANISH 1 ELEMENTARY SPANISH**

**Units:** 4  
**Transfer:** CSU/UC  
**Advisory:** Completion of English A or equivalent with a grade of “C” or better  
**Hours:** 5 (4 lecture, 1 laboratory)
First of two semesters of Elementary Spanish. Provides basic communication skills through listening, speaking, reading, and writing by applying principles of phonetics (speech sounds), morphology (word formation), and syntax (word order) in the context of Spanish-speaking culture. Corresponds to two years of high school study. (CAN SPAN 2)
(With Spanish 2, CAN SPAN SEQ_A)

**SPANISH 2 ELEMENTARY SPANISH**

**Units:** 4  
**Transfer:** CSU/UC  
**Prerequisite:** Completion of Spanish 1 with a grade of “C” or better, or two years of high school Spanish  
**Hours:** 5 (4 lecture, 1 laboratory)
Second of two semesters of Elementary Spanish. Provides further basic communication skills through listening, speaking, reading, and writing by applying principles of phonetics (speech sounds), morphology (word formation), and syntax (word order) in the context of Spanish-speaking culture. (CAN SPAN 4) (With Spanish 1, CAN SPAN SEQ_A)

**SPANISH 3 INTERMEDIATE SPANISH**

**Units:** 4  
**Transfer:** CSU/UC  
**Prerequisite:** Completion of Spanish 2 with a grade of “C” or better, or three years of high school Spanish  
**Hours:** 5 (4 lecture, 1 laboratory)
First of two semesters of Intermediate Spanish. Provides intermediate level of communication skills through listening, speaking, reading, and writing by applying principles of phonetics (speech sounds), morphology (word formation), and syntax (word order) in the context of Spanish-speaking culture. (CAN SPAN 8) (With Spanish 4, CAN SPAN SEQ_B)

**SPANISH 4 INTERMEDIATE SPANISH**

**Units:** 4  
**Transfer:** CSU/UC  
**Prerequisite:** Completion of Spanish 3 or four years of high school Spanish  
**Hours:** 5 (4 lecture, 1 laboratory)
In-depth study of the Spanish language. Students will write and discuss in Spanish thematic and free essays. Study and practice of literary analysis and technical translation. This course is designed to prepare students for upper division work in Spanish. (CAN SPAN 10)(With Spanish 3, CAN SPAN SEQ_B)

**SPANISH 28 INDEPENDENT STUDY**

**Units:** 1-3  
**Transfer:** CSU/UC*  
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

**SPANISH 300 SELECTED TOPICS IN SPANISH**

**Units:** .5-4  
**Transfer:** CSU/UC*  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

**Special Education**

(SEE SUPPORTIVE EDUCATION)

**Speech**

(SEE COMMUNICATION STUDIES)

**Supportive Education**

**STUDENT SERVICES**

ASSOCIATE VICE PRESIDENT: Mandy Davies  
DEAN: Kaylene Hallberg  
DIVISION OFFICE: Winstead Center L-110  
LIAISON COUNSELORS: S. Bramlett, B. Hancock
The Supportive Education program offers Adult Education training for handicapped adults with physical and learning disabilities, emphasizing motor development, communication skills, basic education, and vocational education.

**SUPPORTIVE EDUCATION COURSES**

**SUP.ED. 802 MOTOR DEVELOPMENT**

**Units:** 0 (Adult Education/No Credit)  
Motor development classes offer physical activities to meet the varied needs of the students. These activities include team sports, jog/walk, women’s exercises, weight training, Special Olympic training, swimming, and yoga.

**SUP.ED. 824 VERBAL COGNITION**

**Units:** 0 (Adult Education/No Credit)  
Fundamentals of reading and writing, emphasis on phonics, spelling, vocabulary and comprehension. Self-improvement in the areas of study skills, problem solving and communication techniques.
SUP.ED. 831 JOB SEARCH SKILLS  
Units: 0 (Adult Education/No Credit)  
Basic computation, consumer math, and practical use of basic computer programs in job search, applications, resume writing and interviewing skills. Job attitudes and work inter-reations in job seeking skills.

Technical Education  
BUSINESS & TECHNOLOGY  
DEAN: Stephanie Guevara  
DIVISION OFFICE: B 3  
liaison COUNSELOR: B. Ruud

Technical Education is provided to prepare students for entry into the workplace. The goal is to develop and maintain a competitive, technologically skilled, and readily available workforce for local employers by delivering affordable training.

Students receive skills specific training in short-term, credit and not-for-credit courses. Practical, hands-on learning in new, state-of-the-art classroom labs prepare students to enter the workforce for the first time or for job advancement within their current specialty.

TECHNICAL EDUCATION COURSES

TECH.ED. 50A HIGH TECH SOLDERING I  
Units: .5  
Hours: As scheduled for a total of 20 hours (9 lecture, 11 laboratory)  
A fundamental study of the basic materials, tools, processes and evaluation of activities involved with state-of-the-art soldering as currently applied in the electronics industry.

TECH.ED. 50B HIGH TECH SOLDERING II  
Units: .5  
Advisory: Completion of Tech.Ed. 50A or equivalent recommended  
Hours: As scheduled for a total of 20 hours (9 lecture, 11 laboratory)  
Specialized study of techniques for soldering and desoldering through-hole and surface mount device (SMD) technology on electronic circuit assemblies.

TECH.ED. 50C HIGH TECH SOLDERING III  
Units: .5  
Advisory: Completion of Tech.Ed. 50B or equivalent recommended  
Hours: As scheduled for a total of 20 hours (9 lecture, 11 laboratory)  

Transfer Studies

TRANSFER STUDIES—A.A. DEGREE

The Transfer Studies degree is designed for students who plan to transfer to a California State University (CSU) or a University of California (UC) campus. This degree enables students to complete the requirements for the associate degree and the lower division general education transfer requirements.

To meet the requirements for this degree, students must fulfill the following:

1) Complete EITHER the Intersegmental General Education Transfer Curriculum (IGETC) (34-41 units) OR the General Education Breadth Requirements for the California State University (CSU GE) (39 units).

2) Complete all Sierra College Associate Degree General Education Breadth and Learning Skills requirements not already met by courses completed for item #1 above. This most often includes the Multicultural Studies and Health Education/Physical Education requirements.

3) Complete 19-26 transferable units of preparation for the major or electives taken from the University of California Transfer Course Agreement or the California State University Baccalaureate Level list. It is recommended that students complete as much lower division major preparation as possible.

4) Students following the CSU GE pattern must complete courses in Areas A1, A2, A3, and B3 with grades of “C” or better. All courses used to fulfill IGETC must be completed with grades of “C” or better. A minimum of 60 units with a cumulative grade point average of 2.0 or higher is required for the associate degree. To satisfy the minimum eligibility requirements for the University of California (UC), students must complete 60 UC transferable units with a 2.40 GPA.

NOTE: Students should meet with a counselor to determine if the Transfer Studies degree is appropriate. It may not be suitable for every transfer major, such as Engineering, Science, or other high unit majors. Specific CSU or UC campuses may have additional requirements for general education and admission. This degree does not guarantee admission to a CSU or UC.

Vocational Nursing  
(SEE NURSING)
Welding Technology

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
LIAISON COUNSELORS: C. Epting-Davis, D. Quadros

The Welding Technology curriculum provides training in the field of commercial and industrial welding and fabrication. Students enrolled in Welding Technology courses will receive both the theoretical technical knowledge and the hands-on skills that will prepare them for a career in welding.

A.A. and A.S. degrees as well as certificates can be earned in the Welding Technology Program. The certificate program does not satisfy A.A. or A.S. degree requirements, but does qualify students for certificates in the chosen field of study.

WELDING TECHNOLOGY—
A.A. OR A.S. DEGREE
(FORMERLY METALS AND MANUFACTURING TECHNOLOGY)
Successful completion of the degree pattern in Welding Technology prepares students for transfer to the California State University system in industrial-related degree programs. It also provides the broad background education necessary to compete successfully in commercial and industrial welding and related fabrication fields. Students must fulfill major requirements and all Associate Degree requirements for the A.A./A.S. degree, see pages 42-43.

REQUIRED CORE COURSES: UNITS
Weld Tec 10 Exploring Metals/Introduction to Welding ........... 3
Weld Tec 20 Introduction to Welding Technology ................. 3
Weld Tec 30 Shielded Metal Arc Welding of Structural Plate and Pipe 3
Weld Tec 40 Wire Feed MIG Welding .............................. 2
Weld Tec 50 Gas Tungsten Arc Welding (TIG) ...................... 3
Weld Tec 60 Welding Metallurgy .................................... 2
Weld Tec 80 Structural Welding Certification OR ............... 3
Weld Tec 82 Pipe Welding Certification ............................. 1-1.5
Weld Tec 82 Pipe Welding Certification ......................... 1-1.5
TOTAL UNITS REQUIRED: 29-31.5

PLUS 12 UNITS SELECTED FROM THE FOLLOWING:
Weld Tec 10 Exploring Metals/Introduction to Welding ........... 3
Weld Tec 28 Independent Study .................................... 3
Weld Tec 95 Internship in Welding Technology .................. 3
D.D. 8 Technical Drafting I ........................................... 3
D.D. 9 Technical Drafting II ......................................... 3
Art 22 Creative Design in Metal ................................... 3
Math. A Elementary Algebra OR more advanced mathematics course ........................................... 3-5

SKILLS CERTIFICATES
The Welding Technology Skills Certificate Program is designed to qualify students for specialized skills in the commercial and industrial welding field. The Skills Certificates are intended to enhance the skill proficiency of those already employed in the vocation of welding and metal fabrication.

SHIELDED METAL ARC WELDING SKILLS CERTIFICATE
REQUIRED COURSES: UNITS
Weld Tec 10 Exploring Metals/Introduction to Welding ........... 3
Weld Tec 20 Introduction to Welding Technology ................ 3
Weld Tec 30 Shielded Metal Arc Welding of Structural Plate and Pipe 3
Weld Tec 80 Structural Welding Certification OR ............... 3
Weld Tec 82 Pipe Welding Certification ............................. 1-1.5
TOTAL UNITS REQUIRED: 10.5

GAS METAL ARC WELDING SKILLS CERTIFICATE
REQUIRED COURSES: UNITS
Weld Tec 10 Exploring Metals/Introduction to Welding ........... 3
Weld Tec 20 Introduction to Welding Technology ................ 3
Weld Tec 30 Shielded Metal Arc Welding of Structural Plate and Pipe 3
Weld Tec 40 Wire Feed MIG Welding .............................. 2
TOTAL UNITS REQUIRED: 11
GAS TUNGSTEN ARC WELDING SKILLS CERTIFICATE
REQUIRED COURSES: UNITS
Weld Tec 10 Exploring Metals/Introduction to Welding ............ 3
Weld Tec 20 Introduction to Welding Technology .................... 3
Weld Tec 35 Welding Skill and Speed Development ............... 2
Weld Tec 50 Gas Tungsten Arc Welding (TIG) ....................... 3
TOTAL UNITS REQUIRED: 11

METAL FABRICATOR AND DESIGNER SKILLS CERTIFICATE
REQUIRED COURSES: UNITS
Weld Tec 10 Exploring Metals/Introduction to Welding ............ 3
Weld Tec 20 Introduction to Welding Technology .................... 3
Weld Tec 30 Shielded Metal Arc Welding of Structural Plate and Pipe 3
Weld Tec 40 Wire Feed Mig Welding ................................. 2
Art 22 Creative Design in Metal ................................. 3
TOTAL UNITS REQUIRED: 14

WELDING TECHNOLOGY COURSES
WELD TEC 10 EXPLORING METALS/INTRODUCTION TO WELDING
Units: 3 Transfer: CSU
Hours: 6 (2 lecture, 4 laboratory)
History and development of metal working, including current techniques and fabrication standards. Proper and safe use of modern metal fabrication equipment and hands-on experience with the two most common welding processes, Oxy-Acetylene (Gas) welding and Shielded Metal Arc (Stick) welding.

WELD TEC 20 INTRODUCTION TO WELDING TECHNOLOGY (FORMERLY M.T. 60)
Units: 3 Transfer: CSU
Prerequisite: Completion of Weld Tec 10 or equivalent experience
Advisory: Completion of English 50 or equivalent
Hours: 6 (2 lecture, 4 laboratory)
Introductory course in welding methods. Instruction in oxy-acetylene welding, cutting and brazing. Electric Arc welding processes include Stick Arc (SMAW), MIG wire feed (GMAW), and Flux Core Arc (FCAW). Plasma and Carbon Arc Cutting in addition to Flame Cutting are also explored. Course intended to teach basic welding processes, principles and applications. May be taken three times for credit.

WELD TEC 28 INDEPENDENT STUDY (FORMERLY M.T. 28)
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

WELD TEC 28 INDEPENDENT STUDY (FORMERLY M.T. 28)
Units: 1-3 Transfer: CSU
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study problems might include, but are not limited to, research papers, special construction projects, and research projects. May be taken four times for credit. See Independent Study page in catalog.

WELD TEC 30 SHIELDED METAL ARC WELDING OF STRUCTURAL PLATE AND PIPE (FORMERLY M.T. 61)
Units: 3 Transfer: CSU
Prerequisite: Completion of Weld Tec 20 or equivalent experience using Shielded Metal Arc process
Advisory: Familiar with out-of-position welding (especially vertical and overhead) and welding joint preparation
Hours: 6 (2 lecture, 4 laboratory)
Welding of structural plates and pipes using accepted practices of industry with Shielded Metal Arc (Stick) Process. Emphasis on techniques of out-of-position welding (3G-4G plate and 5G-6G pipe full penetration welds). May be taken two times for credit.

WELD TEC 35 WELDING SKILL AND SPEED DEVELOPMENT (FORMERLY M.T. 35)
Units: 2
Prerequisite: Completion of one or more Welding Technology courses or equivalent welding experience
Hours: 4 (1 lecture, 3 laboratory)
Further development of skills, speed, and experience in Welding Technology. Individual projects are designed by the student with the approval and supervision of the instructor. May be taken three times for credit.

WELD TEC 40 WIRE FEED MIG WELDING
Units: 2 Transfer: CSU
Hours: 5 (1 lecture, 4 laboratory)
Covers the various modes of metal transfer across the arc when using Gas Metal Arc Welding process or MIG and Flux Cored Arc Welding, both Self Shielding and Dual Shielding. May be taken two times for credit.
WELD TEC 50 GAS TUNGSTEN ARC WELDING (TIG)  
(FORMERLY M.T. 62)  
Units: 3  
Transfer: CSU  
Prerequisite: Completion of Weld Tec 10 or equivalent  
Oxyactylene Welding experience  
Hours: 6 (2 lecture, 4 laboratory)  
Tungsten Inert Gas Welding methods and techniques used to weld exotic metals such as stainless, aluminum, and alloy steels. Instruction in equipment setup for different metals, rod selection, material identification, and welding techniques using Gas Tungsten Arc. Laboratory exercises include starting the arc, running beads, pad welding, fillet and groove welds using various metals. May be taken two times for credit.

WELD TEC 60 WELDING METALLURGY (FORMERLY M.T. 40)  
Units: 2  
Transfer: CSU  
Prerequisite: Completion of Weld Tec 30 or Weld Tec 50  
Advisory: Completion of Chem. A  
Hours: 4 (2 lecture, 2 laboratory)  
Exploration of the production and properties of ferrous metals used in the welding industry. The chemical and physical properties of metals, crystallization, and theoretical concepts of alloying. Laboratory experiments in metal identification, hardness and destructive testing, heat treating, sample preparation, and microphotography.

WELD TEC 80 STRUCTURAL WELDING CERTIFICATION  
Units: 1.5  
Prerequisite: Completion of or concurrent enrollment in Weld Tec 30 or Weld Tec 40 or ability to demonstrate equivalent arc welding skills  
Advisory: Students must be competent in vertical and overhead position welding using certification welding processes  
Hours: As scheduled for a total of 54 hours (13.5 lecture, 40.5 laboratory)  
Designed to certify the welder within the guidelines of American Welding Society (AWS) Structural Steel Code D1.1 or (AWS) Structural Aluminum Code D1.2. Focus on manipulative skill development using SMAW, FCAW and GMAW processes in preparation for the actual certification test. May be taken four times for credit.

WELD TEC 82 PIPE WELDING CERTIFICATION  
Units: 1  
Transfer: CSU  
Prerequisite: Completion of or concurrent enrollment in Weld Tec 30 or Weld Tec 40 or ability to demonstrate equivalent arc welding skills  
Advisory: Students must be competent in vertical and overhead position welding using certification welding processes  
Hours: As scheduled for a total of 42 hours (6 lecture, 36 laboratory)  
Designed to certify the welder within the guidelines of American Society of Mechanical Engineers—section #IX—Boiler and Pressure Vessel Code or American Petroleum Institute—welding of crosscountry pipelines. Focus on manipulative skill development using SMAW, GTAW and GMAW processes in preparation for the actual certification test. May be taken four times for credit.

WELD TEC 95 INTERNSHIP IN WELDING TECHNOLOGY  
(FORMERLY M.T. 95)  
Units: .5-4  
Transfer: CSU*  
Corequisite: Must be currently enrolled in and complete at least 7 units including internship course for Fall and Spring semester internships, or at least one other course for summer internships  
Designed for advanced students who are performing work in an area related to their educational or career goals. Provides new on-the-job technical training under the direction of the supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. May be taken four times for credit.

WELD TEC 300 SELECTED TOPICS IN WELDING TECHNOLOGY  
(FORMERLY M.T. 300)  
Units: .5-4  
Transfer: CSU  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “300” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.

WELD TEC 400 SELECTED TOPICS IN WELDING TECHNOLOGY  
(FORMERLY M.T. 400)  
Units: .5-4  
Courses of study will cover topics relevant to the discipline. Topics will vary. Course content and unit credit to be determined by the division. May be offered as seminar, lecture, or lecture/laboratory classes. Students may repeat “400” courses within a discipline only when a topic is different from previously completed course. See Selected Topics page in catalog.
Women and Gender Studies

LIBERAL ARTS
INTERIM DEAN: Debra Sutphen
INTERIM ASSOCIATE DEAN: Rebecca Bocchicchio
DIVISION OFFICE: W 107
liaison COUNSELORS: M. Moon, V. Skeels

WOMEN’S STUDIES—A.A. DEGREE
Women’s Studies is an interdisciplinary major based on the premise that gender is a historical variable that affects the social, economic, and political structure of our society as well as the everyday lives of women and men. Employing a wide range of perspectives from disciplines such as history, literature, philosophy, sociology, psychology, art, anthropology, and biology, students will explore and examine how these disciplines pertain to women and how women have contributed to the cultural and sociological landscape.

The A.A. degree provides students with core courses in Women’s Studies. Students may utilize the Women’s Studies curriculum to fulfill transferable general education requirements for CSU and UC systems as well as lower division Women’s Studies courses for transfer to four-year institutions with women’s studies majors. Students must fulfill major requirements and all Associate Degree Requirements for the A.A. degree, see pages 42-43. Courses used to satisfy this major may not be used to satisfy A.A. General Education requirements.

REQUIRED CORE COURSE: UNITS
WMST 1 Introduction to Women’s Studies ................. 3

PLUS 15 ADDITIONAL UNITS FROM THE FOLLOWING:
Anthro. 27 Gender, Sex and Culture ..................... 3
Art 1E Women and Art in History .......................... 3
English 27 Literature by Women .......................... 3
History 27 Women in American History .................. 3
Phil. 27 Introduction to Philosophy of Women in World Cultures 3
Pol.Sci. 27 Women and Politics in a Global Society ........ 3
Psych. 27 Psychology of Women .......................... 3
P.D. 6 Career Planning OR
P.E. 4 Nutrition, Health and Fitness (also Nut./Fd. 4) OR
Psych. 30 Human Sexuality .............................. 3

TOTAL UNITS REQUIRED: 18

WOMEN & GENDER STUDIES COURSES

WMST 1 INTRODUCTION TO WOMEN’S STUDIES
(FORMERLY SOC.SCI. 27)
Units: 3  Transfer: CSU/UC
Hours: 3 lecture
Interdisciplinary introduction to women’s studies through the exploration and examination of historical, philosophical, sociological, psychological and literary perspectives as they pertain to women. Emphasis will be placed on how gender, race, ethnicity, culture, class, age, (dis)ability, sexual and national identities are constructed in relation to each other and how these systems shape women’s lives.
ACADEMIC DISHONESTY
The two most common kinds of academic dishonesty are cheating and plagiarism. Cheating is the act of obtaining or attempting to obtain credit for academic work through the use of dishonest, deceptive or fraudulent means. Plagiarism is representing the work of someone else as one's own and submitting it for any purpose. Students are responsible to know what academic dishonesty means.

Examples of cheating include:
- Copying from someone else's test;
- Purposely allowing another student to copy during a test;
- Accepting assistance, oral or written, during a project or examination without instructor approval;
- Lying to an instructor or college official to improve a grade;
- Removing tests from the classroom without the instructor's approval;
- Using forbidden notes or other sources on examinations;
- Altering or interfering with grading;
- Someone other than student attending course or taking examination;
- Forging signatures on attendance documents or other college records;
- Stealing copyrighted computer software;
- Using an electronic device (calculator, tape recorder, or computer) during an examination without permission.

EXAMPLES OF PLAGIARISM INCLUDE:
- Submitting a paper purchased from a research or term paper service;
- Incorporating another person's ideas, words, sentences, or paragraphs, without giving appropriate credit, and representing the product as one's own work;
- Representing someone else's artistic or scholarly work (e.g., musical compositions, computer programs, photographs, drawings) as one's own.

CONSEQUENCES OF ACADEMIC DISHONESTY
Depending on the seriousness of the infraction, students may be subject to one or more of the following:
- Receive an “F” in the assignment,
- Receive an “F” in the assignment, and/or
- Be placed on disciplinary probation,
- Be placed on disciplinary suspension, and/or
- Be expelled.

Instructors, who assign a grade of “F” for cheating, will document that the grade was assigned for academic dishonesty. The documentation will be stored in the student's permanent academic file. Grades assigned for cheating cannot be changed at a later date, nor will students be eligible to repeat the course to have the grade eliminated from the cumulative GPA. Students who have been reported for academic dishonesty more than once will be subject to further disciplinary action.

CODE OF CONDUCT
All members of the College community share the responsibility for preserving a quality learning environment. By enrolling in Sierra College, students agree to be responsible members of the College community; obey the law; comply with the published rules and regulations of the College; respect the rights, privileges and property of the other members of the College community; and not interfere with legitimate College affairs.

Unacceptable behavior includes, but is not limited to, the following:
- Continued disruptive behavior or willful disobedience, habitual profanity or vulgarity, or the open and persistent defiance of College personnel;
- Use, possession, distribution, or sale of alcoholic beverages on campus or during College-sponsored activities such as field trips, athletic events, conferences, and workshops;
- Act or threat of damage to or theft of property belonging to or located on College-controlled property or facilities;
- The physical or verbal disruption of instructional or student services activities, administrative procedures, public service functions, authorized curricular or co-curricular activities or prevention of authorized guests from carrying out the purpose for which they are on campus;
- Unauthorized entry into, or use of, College-controlled facilities;
- Disorderly, lewd, indecent or obscene conduct or expression or habitual profanity or vulgarity on College-con-
trolled property or at College-sponsored or supervised functions;
• Cheating or plagiarizing in relation to a College course or academic program;
• Assault, or battery upon a student or College personnel or authorized visitor;
• Possession or use of explosives, dangerous chemicals or deadly weapons on campus property or at a College-approved function;
• Gambling on College controlled property;
• Willful or persistent smoking in an area where smoking has been prohibited by law or regulation;
• The possession, distribution, manufacturing, or sale of narcotics or other hallucinogenic drugs or substances.

REMOVAL FROM CLASS BY INSTRUCTOR
An instructor may remove a student from class for the day of the removal and the next class meeting (no matter the length or type of class) for any good cause. The instructor shall immediately report the removal to the Disciplinary Officer. If the student removed is a minor, the Disciplinary Officer will invite the student’s parent or guardian to attend a parent conference regarding the removal as soon as possible. If the instructor or parent or guardian so requests, a District administrator shall attend the conference. During the period of removal, the student shall not be returned to the class from which he or she was removed without the concurrence of the instructor.

FAILURE TO COMPLY WITH PROGRAM-SPECIFIC POLICIES AND PROCEDURES
Sierra College offers educational and residential programs that require compliance with specific policies, procedures and standards such as: Nursing, Public Safety and Residence Life. Students who fail to comply with these policies will be disciplined according to the specific mandates of the program.

STUDENT DISCIPLINE
All Sierra College students are subject to the same consequences for violations of college policies regarding student code of conduct. A Disciplinary Officer is assigned by the Superintendent/President and is responsible for investigating charges of policy violations, imposing disciplinary sanctions deemed appropriate, and for providing students due process procedures.

A student may be referred to the Disciplinary Officer by any member of the staff or faculty, or another student. The Disciplinary Officer will offer the accused student an opportunity to respond to the accusation. After hearing the student’s explanation and considering all information relative to the issue, the Disciplinary Officer may take any of the following actions:

1. Drop the charges for lack of evidence.
2. Issue a reprimand and warning to the student that continued or additional violations may result in subsequent disciplinary action.
3. Refer the student for counseling or rehabilitative treatment.
4. Prohibit the student from intentionally contacting (e.g., by telephone or email), or otherwise disturbing the peace of others specifically named for a specified period of time.
5. Place the student on suspension status including one or more of the following:
   A. Withdraw consent for the student to remain on campus or District-controlled property.
   B. Place the student under short-term suspension from one or more classes or activities (sports, student government, field trips, drama events, etc.) for a period of up to ten (10) days of instruction. Short-term suspensions and lesser sanctions cannot be appealed. If a minor student is suspended, the parent or guardian shall be notified in writing of the suspension.
   C. Place the student under long-term suspension from one or more classes or activities for more than ten (10) days, for the remainder of the semester, or from all classes and activities for one or more terms. The student has the right to appeal long-term suspensions.
6. Recommend permanent expulsion.
7. Any other action the Disciplinary Officer deems appropriate.

Any student suspended or expelled from the District is ineligible for scholarships, loans, grants, or any other financial aid during the period of suspension or expulsion; ineligible for student employee status with the College for the period of suspension or expulsion; and ineligible for any refunds or credits for any fees paid.

DISCIPLINARY APPEAL PROCEDURES
If a decision is made to suspend the student for more than ten (10) days or to recommend expulsion, the student will be provided a written notice of his or her right to file an appeal within three (3) instructional days. By filing an appeal, the student initiates due process proceedings. If an appeal is requested, the Disciplinary Officer will convene
a meeting of the Disciplinary Appeals Committee within ten (10) instructional days from the date the appeal was filed. The Disciplinary Appeals Committee will consider all relevant evidence pertaining to the allegations and will issue a written report to the Superintendent/President. The Superintendent/President shall submit a written decision to all parties concerned. The Superintendent/President may accept or reject the findings and recommendations of the Disciplinary Appeals Committee. On decisions regarding disciplinary action up to and including multiple terms of suspension, the Superintendent/President’s decision is final. A decision to permanently expel the student requires formal action by the Board of Trustees.

Students will be allowed to continue with their scheduled classes and activities through the due process procedures. However, the Disciplinary Officer has the right to remove the student’s privilege to participate in classes or activities or to remain on College-controlled property through the proceeding of due process procedures in circumstances where the student is considered a threat to the health, safety, or well being of other members of the campus community.

STUDENT RIGHTS
Students are encouraged to pursue their academic studies and become involved in other College-sponsored activities. In pursuit of these needs, students should be free of unfair and improper actions on the part of any member of the academic community. If, at any time, students feel that they have been subject to an unjust action or decision or denied their rights, a remedy may be pursued through the Grievance Process.

Students have the right to:
- Academic records that are treated in a confidential and responsible manner;
- Exercise free expression;
- Be free from unlawful acts or threats of discrimination, intimidation, harassment, or physical aggression;
- Take reasoned exception to the data or views offered in a course of study;
- Participate in the formation of policy through Shared Governance;
- Form an organization around any particular interest, subject to District policies;
- Develop publications in accordance with District policies;
- Receive appropriate academic adjustments and auxiliary aids as specified in the Americans with Disabilities Act and Section 504 of the Federal Rehabilitation Act of 1973.

GRIEVANCE PROCEDURES
A grievable matter is any alleged action or decision of the College that adversely affects the status of a student or violates the rights of a student as set forth in Board Policy 5530. Procedures for grievances and complaints are provided below and provide exclusive means for resolving any alleged unfair or improper action. The purpose of these procedures is to secure an equitable solution to student complaints at the earliest level possible. The following allegations or issues are not grievable:
- Discipline of students;
- Discipline of employees;
- Traffic or parking citation (through Police Services);
- Correction to records, including grade changes;
- Discrimination or sexual harassment complaints other than academic accommodation.

The Superintendent/President appoints a College employee to serve as the Grievance Officer. The Grievance Officer avoids an adversarial role; assists all parties to facilitate a full, fair and efficient resolution of the grievance; and coordinates all scheduling of grievance hearings.

A student who believes that his/her rights have been violated must make a reasonable, good faith attempt to resolve the matter through the informal problem resolution process before the formal process can be requested. At any point during the informal problem-resolution level, a student may also informally and orally present the complaint to the Grievance Officer. The Grievance Officer will attempt to resolve the issue informally.

INFORMAL GRIEVANCE PROCESS
First Step: The student should discuss the problem directly with the person involved or see a counselor to seek assistance in problem resolution within sixty (60) instructional days from the date the student became aware of the problem/or the alleged act. Failure of the student to act within the above-specified sixty (60) day period shall constitute a waiver of the right to pursue the matter further.

Second Step: If the problem cannot be resolved at the first step, the student shall discuss the problem with the immediate supervisor of the person against whom the complaint is directed. The immediate supervisor shall make every effort to resolve the problem with the student and the person being grieved.

Third Step: If the problem cannot be resolved at the
second step, the student shall discuss the grievance with the next-level administrator within ten (10) working days from receiving a decision from the immediate supervisor.

**FORMAL GRIEVANCE PROCESS**

If the grievance has not been resolved to the student’s satisfaction, within five (5) instructional days of the completion of the informal grievance process, the student may file a formal grievance by submitting a Grievance Form to the Grievance Officer. The Grievance Form may be obtained from the Grievance Officer. The Grievance Officer will determine whether the allegations are grievable under College regulations. If the grounds for grievance have been satisfied, a formal hearing before the Grievance Committee will be scheduled within ten (10) instructional days of the request. The Grievance Committee will consider all relevant evidence pertaining to the grievance and issue a written report to the Superintendent/President. The Superintendent/President shall submit a written decision to all parties concerned. The Superintendent/President may accept or reject the findings and recommendations of the Grievance Committee. Once the Superintendent/President makes a final decision, the grievance process has been completed.

Complete copies of all relevant board policies and administrative regulations regarding Student Rights and Responsibilities are available on the Sierra College web site at www.sierracollege.edu, under Student Rights and Responsibilities. Students may also obtain copies of the policies on Student Rights and Responsibilities at: Rocklin Campus, Office of the Associate Vice President, Student Services, Winstead Center, (916) 789-2651; Sierra College–Nevada County Campus, Dean, Administration Building, (530)-274-5320; Sierra College–Roseville Gateway Center, Admissions Office, (916) 781-6204.

**DISABILITY**

The Sierra Joint Community College District does not discriminate on the basis of disability in admission, access, treatment, or employment for any of its programs and activities. Section 504 of the Rehabilitation Act of 1973, as amended, and the regulations adopted thereunder prohibit such discrimination. Students seeking information regarding Section 504 should contact the District’s Enabler, (916) 781-0485. The District is in compliance with the Americans with Disabilities Act of 1990. Inquiries concerning compliance may be addressed to the Manager, Equal Employment Opportunity/Human Resources Office, (916) 781-0446.

**ACADEMIC ACCOMMODATION POLICY**

Disabled Student Programs and Services (DSP&S) provides programs and support services to students with verified disabilities, and ensures that disabled students have equality of access to classes and programs.

The goal of providing reasonable academic accommodations to disabled students is to minimize the effects of the disability in the educational process. The disabled students need to be given the opportunity both to acquire information and to be evaluated in a way which allows the student to fully demonstrate his/her knowledge of the subject. Academic accommodations are individually determined by DSP&S certified faculty in consultation with the students and are based on a review of the functional educational limitations associated with the disability. Appropriate reasonable accommodations will be made in a timely manner.

**Student Responsibilities:**

1. The student must be enrolled in Sierra College classes and must provide the DSP&S office with a written verification of their disability including identification of educational limitation(s) due to the disability.

2. Each semester and/or as needed during the semester the student will schedule an appointment to meet privately with a DSP&S certified faculty member to request the academic accommodation(s). The student may, at any time, also request the accommodation directly from the classroom faculty member.

The DSP&S certified faculty member will evaluate the requested accommodation on a course specific basis and will interact and consult as necessary with the student, class instructor(s), and the DSP&S Coordinator to identify the appropriate reasonable academic accommodation for each class. Where it is determined that the accommodation would fundamentally alter the nature of a class or program, the DSP&S certified faculty member will consult further with the instructor to determine whether an alternative accommodation can be identified. A Disabled Student Services Academic Accommodation Certification form will be completed for each class and provided to the student at the time of the appointment.

3. The student will give a copy to the classroom faculty member to certify the college’s authorization of the ac-
accommodation. A copy of the certification will be provided to the student and a copy will be maintained in the student’s DSP&S file.

If the student disagrees with the accommodation determination:
1. The student should contact the DSP&S certificated faculty at any time for further interaction. If the student continues to disagree with the accommodation, he/she will be referred to the DSP&S Coordinator or designee. If there is no further contact made by the student it will be assumed that the student no longer disagrees with the accommodation determination.
2. The DSP&S Coordinator or designee will discuss and confer with the DSP&S certificated faculty member, the class instructor and other resources as appropriate to review the student’s disability and make a determination regarding the appropriate accommodation within 5 (five) instructional days from the date the student contacted the Coordinator.
3. If the student is still not satisfied with the disposition of this accommodation, the DSP&S Coordinator will refer the request to the District ADA/504 Compliance Officer. The Compliance Officer will confer with all necessary parties and make a final determination on behalf of the District within 30 (thirty) instructional days from the date the certification was signed by the DSP&S certificated faculty member.

STUDENT RIGHT-TO-KNOW DISCLOSURE
In compliance with the Student Right-to-Know and Campus Security Act of 1990, it is the policy of Sierra College to make available its completion and transfer rates to all current and prospective students. Beginning in Fall, 1999, a cohort of all certificate-, degree-, and transfer-seeking first-time, full-time students were tracked over a three-year period. Their completion and transfer rates are listed below. These rates do not represent the success rates of the entire student population at Sierra College nor do they account for student outcomes occurring after this three-year tracking period.

Based upon the cohort defined above, 36.0% attained a certificate, degree, or became “transfer prepared” during a three-year period from Fall 1999 to Spring 2002. Students who are “transfer prepared” have completed 56 transferable units with a GPA of 2.0 or better.

Based upon the cohort defined above, 22.0% transferred to another postsecondary institution (CSU, UC, or another California Community College) prior to attaining a degree, certificate, or becoming “transfer prepared” during a five-semester period from Spring 2000 to Spring 2002.

More information about Student Right-To-Know Rates and how they should be interpreted can be found at the California Community Colleges “Student Right-To-Know Information Clearinghouse Website” located at http://srtk.cccco.edu/index.asp.

NON-DISCRIMINATION POLICY IN STUDENT PROGRAMS AND ACTIVITIES
The Sierra Joint Community College District has established non-discrimination policies which conform to applicable state and federal laws. These statutes prohibit discrimination and sexual harassment against all students. It is District policy to provide equal opportunities for all students in admission and access to academic courses, counseling programs, athletic programs, apprenticeship programs, assessment procedures, vocational education and other activities, without regard to students’ race, color, religious creed, national origin, ancestry, ethnic group identification, physical or mental disability, gender, sexual orientation or lack of English language skills. Inquiries concerning compliance may be addressed to the Manager, Equal Employment Opportunity/Human Resources, (916) 781-0446. Students seeking information regarding Section 504 of the 1973 Rehabilitation Act should contact the District’s Enabler, (916) 781-0485.

POLITICA DE NO DISCRIMINACION
En los Programas y Actividades de los Estudiantes
El Distrito de la Universidad de la Comunidad Sierra ha establecido políticas de no discriminación que se adecúan a las leyes estatales y federales aplicables. Estas leyes prohíben la discriminación y el hostigamiento sexual contra todos los estudiantes. Es la política del Distrito proveer igualdad de oportunidades para todos los estudiantes en cuanto a la admisión y el acceso a cursos académicos, programas de consejería, programas atléticos, programas de aprendizaje, procedimientos de evaluación, educación vocacional y demás actividades, sin consideración de la raza, color, creencias religiosas, origen nacional, linaje, identidad por grupo étnico, incapacidad física o mental, género, orientación sexual de los estudiantes, o falta de hablar Ingles. Cualquier pregunta respecto al cumplimiento de estas normas puede dirigirse al Gerente, Oportunidad de Empleo sin Discriminacion/Recursos Humanos (916) 781-0446. Los estudiantes que deseen información respecto a la Sección 504 de la Ley de Rehabilitación de
1973 deben ponerse en comunicación con el Habilitador del Distrito, Edificio K, Telefono (916) 781-0485.

**TITLE IX INFORMATION**
The Sierra Joint Community College District does not discriminate on the basis of gender in the educational programs or activities it conducts. Title IX of the Education Amendments of 1972, as amended, and the administrative regulations adopted thereunder prohibit discrimination (including harassment) on the basis of gender in educational programs and activities operated by the District. Such programs and activities include admission and access to academic courses, counseling programs, athletic programs, apprenticeship programs, assessment procedures, vocational education and other activities. Inquiries concerning compliance may be addressed to the Manager, Equal Employment Opportunity/Human Resources Office, (916) 781-0446.

**SEXUAL HARASSMENT INFORMATION**
Sexual harassment in the learning or working environment of District employees or students by any person in any form is prohibited. Sexual harassment may, in certain circumstances, be a violation of Title VII of the Civil Rights Act of 1964 and/or Title IX of the Education Amendment of 1972, as well as California law. It includes, but is not limited to, unwelcome sexual advances, requests for sexual favors, or other verbal, visual, or physical conduct of a sexual nature. Students who wish to review Sierra College’s complete Sexual Harassment Policy, or who believe they may have been the victim of sexual harassment should contact the Manager, Equal Employment Opportunity/Human Resources at the Rocklin Campus, or call (916) 781-0446.

**FREE EXPRESSION**
The use of speech, with or without electronic amplification, is allowed as long as it does not interfere with nor disrupt the orderly operation of the College, including instruction, registration procedures, public programs, and athletic events. Expression which is obscene, libelous, or slanderous or which incites students as to create a clear and present danger, will be prohibited.

**DISTRIBUTION OR POSTING OF MATERIALS**
Printed materials or petitions may be posted on established bulletin boards in the common areas of the campus, exclusive of classrooms. Postings must bear the date of posting and approval so that they may be removed as needed.

**CAMPUS SECURITY ACT OF 1990**
The Campus Security Act of 1990 requires that all colleges and universities receiving Title IV student aid assistance, prepare and distribute an annual report on crime prevention issues and give statistics on the number of specific crimes which occur on the campus and the number of arrests on the campus for liquor law violations, drug abuse violations, and weapon possessions. In addition, the College must provide timely warnings to the campus community of certain crimes reported to campus security by local law enforcement that may be a threat to other students and employees. A copy of the required document is available in Police Services and is published each year by September 1, or may be viewed via the internet at http://police.sierracollege.edu.

**SMOKING POLICY**
The Board of Trustees at Sierra College recognizes that smoking presents a health and safety hazard that can have serious consequences. Therefore, the Board prohibits the use of all tobacco products by staff, students and visitors in all buildings, within 30 feet of all buildings or similar structures, and in all vehicles owned, leased, or operated by the District.

**DRUG AND ALCOHOL FREE CAMPUS**
Sierra College is committed to a drug and alcohol-free campus for students, faculty and staff. The abuse of illicit drugs and alcohol disrupts classes, compromises one’s physical and mental health, subjects people to criminal penalties, and impairs the ability to benefit from the learning experience. College Standards of Conduct prohibit the use, sale, or possession of any controlled substance. Students who use drugs or alcohol on campus, or at a college-sponsored function or activity will be subject to disciplinary action up to and including suspension, expulsion, and criminal prosecution.

For confidential assistance and referral regarding drug and alcohol use, call:

**Rocklin Campus**
Counseling (916) 781-0487
Health Center (916) 781-0517

**Nevada County Campus**
Counseling (530) 274-5303
Health Center (530) 274-5317

*[Additional information]*
Administration and Staff

BOARD OF TRUSTEES

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STAFFING POLICY

Sierra College, recognizing that as a community college it should reflect the ideals and standards of the community, wishes to reiterate and emphasize its long-standing policy of non-discrimination in the employment of faculty and staff.

ADMINISTRATION

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Superintendent/President
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Fire Technology/Health Sciences, SC-RGC

Allen Race  
Computer Lab, SC-RGC

Becky Ragsac  
Admissions & Records

David Raney  
Systems & Programming

James Razavi  
Mathematics

Sherry Reese  
Warehouse

Karen Reeves  
Student Services, SC-NCC
Coral Reid
Community Education Programs

Margaret Reineking
Sciences & Mathematics

Lynn Roath
Environmental Health & Safety

Millie Roberts
Finance & Administration

William Rogers
Plant Operations

Nathan Rose
Marketing/Public Relations

Barbara Royer
Learning Opportunities Center

Chris Ruanino
Custodial

Aracely Ruiz
Student Services

Dan Rusk
Technology Support Services

Stephen Sampson
Police Services

Gregory Schneider
Purchasing

Lonnie Schwenk
Police Services

Della Seay
Extended Opportunity Programs & Services

Thad Selmants
Learning Resource Center

Pam Sessions
Administrative Services, SC-RGC

Yalan Shang
Physics

Tracy Shields
Articulation

Tina Siler
Equal Employment Opportunity/Human Resources

Carolyn Simmons
Disabled Student Services

Bernard Simuro
Transportation/Custodial

Jill Simuro
Business Services

Lori Sinclair
Fire Technology/Health Science, SC-RGC

Craig Smalley
Database Administration

Nancy Smith
Health, Physical Education, Recreation/Athletics

Gerri Snell
Admissions & Records

Scott Snyder
Technology Support Services

John Souza
Construction Technology

Gayle Stephens
Marketing/Public Relations

Elaine Sturgell
Mathematics

Laurel Thiers
Research & Resources

Melinda Thomas
Library, SC-NCC

Anna Tivol
Distance Learning

Thor Tivol
Theater Maintenance

Diane Tomassello
Student Services, SC-TC

Jean Toussaint
International Students

Tim Trujillo
Custodial

Danita Tucker
Police Services

Alistair Turner
Student Services

Greg Van DeBogart
Technology Support Services

Rhonda Vermillion
Business Services

Corrine Vieira
Admissions & Records

Richard Vincent
Facilities Maintenance

Lynette Vrooman
Writing Center

Mark Wagner
Reprographics

Carolyn Warner
Sciences & Mathematics

Judy Wasley
Admissions & Records

Patty White
Student Financial Services

Denelle Wiggins
Marketing/Public Relations

Trudie Wiggins
Telephone Systems

Paul Wiley
Telephone Systems

Elizabeth Williams
Admissions & Records

Alan Willsmore
Custodial

Frederick Wilson
Energy Maintenance

James Wilson
Biological Sciences

Mary Wollesen
Small Business Development Center

Linda Wood
Mail Services

Diane Wright
Marketing/Public Relations

Doug Yagi
Learning Skills

Craig Yamamoto
Student Financial Services

Rudy Yanez
Facilities Maintenance

Alex Yarmolyuk
Student Services, SC-RGC

Phil Yorde
Technology Support Services

Joanne Zahn
Administrative Coordination, SC-TC
## EMERITUS FACULTY AND ADMINISTRATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Department/Placement</th>
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<tr>
<td>Susan L. Aanes</td>
<td>Extended Opportunity Programs &amp; Services</td>
</tr>
<tr>
<td>Jimmy C. Adamson</td>
<td>Art</td>
</tr>
<tr>
<td>Dr. Gerald C. Angove</td>
<td>President &amp; District Superintendent</td>
</tr>
<tr>
<td>Nancy Allsup</td>
<td>Learning Disabilities</td>
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<tr>
<td>Dr. Harry H. Avis</td>
<td>Psychology</td>
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<tr>
<td>Linda Banta</td>
<td>Biological Sciences</td>
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<tr>
<td>Stephen M. Barooshian</td>
<td>U.S. History and Government</td>
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<tr>
<td>Dr. David Beasley</td>
<td>History</td>
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<tr>
<td>William C. Belvel</td>
<td>Mathematics</td>
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<tr>
<td>Roland A. Bergthold</td>
<td>Biological Sciences</td>
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<tr>
<td>Nancy L. Berman</td>
<td>Dean, Business &amp; Technology</td>
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<tr>
<td>Dr. John M. Berutti</td>
<td>Anthropology/Social Science</td>
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<tr>
<td>Pauliene Bond</td>
<td>Home Economics</td>
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<tr>
<td>Noreen A. Bothwell</td>
<td>Assistant Dean, Nursing</td>
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<tr>
<td>Clifford A. Brau</td>
<td>Music</td>
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<tr>
<td>Paul R. Brewer</td>
<td>Design Drafting/Engineering</td>
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<tr>
<td>Bruce W. Broadwell</td>
<td>Computer Science</td>
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<tr>
<td>Ronald K. Bryant</td>
<td>Director of District Planning</td>
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<tr>
<td>Dr. Donald A. Brophy</td>
<td>Executive Dean, Research &amp; Planning</td>
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<tr>
<td>Clifford Burns</td>
<td>Computer Science</td>
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<tr>
<td>Sheila R. Butler</td>
<td>Counselor</td>
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<tr>
<td>Dr. William Carmody</td>
<td>Music</td>
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<td>Rex H. Chappell</td>
<td>Physical Education</td>
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<tr>
<td>Paul S. Chesney</td>
<td>Director of Athletics</td>
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<tr>
<td>Michael P. Claytor</td>
<td>Anthropology</td>
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<td>Robert H. Corbett</td>
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<td>Donald Cosper</td>
<td>Sociology</td>
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<td>Harold Cox</td>
<td>Mathematics</td>
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<tr>
<td>John R. Creelman</td>
<td>Economics/History</td>
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<tr>
<td>Arthur P. Curry</td>
<td>Director of Economic Development</td>
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<tr>
<td>V. Elmo Daley</td>
<td>English</td>
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<tr>
<td>Paul Dawley</td>
<td>Construction Technology</td>
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<tr>
<td>Barbara T. Dawson</td>
<td>English/Skill Development</td>
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<tr>
<td>John W. DeLury</td>
<td>Vice President for Finance &amp; Administration</td>
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<tr>
<td>Dorothy V. DeRoche</td>
<td>French/English</td>
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<td>David D. Dickson</td>
<td>English/German</td>
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<tr>
<td>Ernest A. Driscoll</td>
<td>Administration of Justice</td>
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<tr>
<td>Robert H. Duke</td>
<td>Earth Science</td>
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<tr>
<td>Dr. Ralph D. Eavenson</td>
<td>English</td>
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<tr>
<td>Don C. Edgar</td>
<td>Health/Physical Education</td>
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<tr>
<td>Perry Edwards</td>
<td>Computer Science</td>
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<tr>
<td>Susan Eiland-Rickman</td>
<td>Learning Disabilities</td>
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<tr>
<td>Roy T. Elliott</td>
<td>Business/Computer Information Systems</td>
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<tr>
<td>C. David Emerson</td>
<td>Counseling</td>
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<td>Donald P. Evans</td>
<td>Counselor</td>
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<tr>
<td>Lewis Fellows</td>
<td>Dean, Physical Education &amp; Athletics</td>
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<tr>
<td>Charles E. Fitzpatrick</td>
<td>Physical Education/Special Education</td>
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<tr>
<td>Kathro Frank</td>
<td>Dean of Student Personnel Services</td>
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<tr>
<td>Sydne J. Gervais</td>
<td>College Health Nurse</td>
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<tr>
<td>Salvatore F. Gianna</td>
<td>Director of Computing &amp; Information Services</td>
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<tr>
<td>Dr. Edward Gieszelmann</td>
<td>Mathematics</td>
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<tr>
<td>George Goto</td>
<td>Associate Dean, Physical Education and Athletics</td>
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<tr>
<td>Carl S. Harvey</td>
<td>Electronics</td>
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<tr>
<td>Leslie D. Herrill</td>
<td>Chemistry</td>
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<tr>
<td>William W. Hill</td>
<td>Music</td>
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<tr>
<td>Dr. James R. Hirschinger</td>
<td>Dean, Student Development</td>
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<tr>
<td>Esther L. Hogans</td>
<td>Human Environmental Sciences</td>
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<tr>
<td>John P. Horrillo, Jr.</td>
<td>Physical Education</td>
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<tr>
<td>William H. Howarth</td>
<td>English</td>
</tr>
</tbody>
</table>
Steven L. Hunter  
Computer Integrated Electronics

Garvin L. Jabusch  
Construction Technology

Dr. Martin E. Jack, Jr.  
Vice President for Educational Programs & Services

Evan W. Jones  
Physics

Gary S. Judd  
Physical Education

Don M. Juergenson  
Metals & Manufacturing Technology

Roselene Kelley  
Human Development

Kathleen Kolster  
Registered Nursing/Vocational Nursing

Robert W. Lawrence  
Physics

Steven Ledbetter  
Automotive Technology

Leland E. Mansuetti  
Business

Richard S. Marasso  
Astronomy

Jacquelynne J. Marchi  
Extended Opportunity Programs & Services

Theresa C. Markovich  
School Nurse

Walter L. McCallum  
Chemistry

Alfred J. McElroy  
Dean, Sciences & Mathematics

Joan C. McFarland  
History/Sociology

John F. McFarland  
History/Social Science

Dr. Robert H. Meyer  
English/Humanities

Jack O. Moore  
Drafting Technology/Engineering

Mary E. Moore  
Registered Nursing

Barton E. Newlin  
Business

Raymond D. Oliva  
English

Les Olsen  
Counselor

William C. Pannell  
Mathematics

Clair R. Parsh  
Business

Walter E. Pease  
Mathematics

Sharon Peterson  
Assistant Dean, Community Education

Dr. Dorothy L. Pethel  
Director of Vocational Nursing

Martha F. Pierce  
English

William R. Pierce  
Assistant Dean, Learning Resources

Harry L. Powell  
Administration of Justice

Nancy Price  
Nursing

Dr. Kevin M. Ramirez  
Superintendent/President

Roger V. Rasmussen  
Business

Ernest R. Riley  
Biological Sciences

Fernando Rodriguez  
Spanish

Dr. Jo Lynn Samuelson  
Political Science/Social Science

Marjorie L. Sanchez  
Director, Vocational Nursing

George S. Sessions  
Philosophy

Charles J. Snyder  
Marketing

Dr. Dolores E. Sorenson  
Business

Dr. Joan Spencer  
History/Social Science

John Sperry  
Engineering/Physics

Charlotte Starbird  
Communication Studies/Drama/Speech

Bonnie L. Stephens  
Business/Computer Information Systems

Joan C. Stewart  
Vocational Nursing

Burton W. Stokesbary  
Counselor

Dr. Frank D. Strong  
Assistant Superintendent/Vice President for Finance & Administration

Jo A. Sumner  
Associate Dean, Curriculum & Instructional Support

Lenard E. Taylor  
Mathematics
ADVISORY COMMITTEES

ACCOUNTING
Terry Anderson, Executive Director
Education Resource Center,
Sacramento
Jennifer Aragon, C.P.A. Statutory
Accountant, Sacramento
Steven Booth, Health Financial
Services, Sacramento
Vanessa Burke, C.P.A., Gilbert &
Associates, Sacramento
Albert Cheung, Orangevale
Linda Costello, C.P.A. Citrus Heights
Brett Davis, Partner, Elam & Davis,
Fair Oaks
Dennis Doucette, C.P.A., Doucette &
Company, Sacramento
Don Edgar, Jr., C.P.A. Damore,
Hamric, & Schneider, Inc.,
Sacramento
Susan Espana, Teacher, Rocklin High
School
Janice Reynolds Gage, Analyst, Placer
County Executive Office, Auburn
Tamie Gierth, Gierth & Associates,
Citrus Heights
Kathy Gray, C.P.A., Auburn
Sabrina Higby, Rose & Rose, Loomis
Dave Jewett, Consultant, Citrus
Heights
Robert Johnson, C.P.A., Citrus
Heights
Kathy Martinis, C.P.A., Auditor-
Controller, Auburn
Michael R. Mecay, C.P.A., Moss
Adams LLP, Sacramento
Michelle Phillips, C.P.A., Roseville
Steve Phillips, C.P.A., Kuppinger/
Phillips, Auburn
Kathy Queen, Controller, ECORP
Consulting, Inc., Roseville
Cindy Schneider, C.P.A., Controller,
The Dentist Company, Sacramento
Bruce W. Stephenson, Chairperson,
C.P.A., Bartig, Basler and Ray, CPA’s
Inc., Roseville
Ivan Van Dyke, C.P.A., Bookmakers,
Sacramento
Mike Welty, C.P.A., Utomomy, Inc.,
Rocklin
Peter Wiese, C.P.A., Perry Smith, LLP,
Sacramento
Rod Wiessner, C.F.O., Five Star Bank,
Rocklin
Sherri Yokomizo, Rocklin

ADMINISTRATION OF
JUSTICE
Ed Bonner, Sheriff, Placer County,
Auburn
Dan Boon (Retired), Police Chief,
Town of Truckee
Brad Fenocchio, District Attorney,
Placer County, Auburn
Ed Machado, Supervising Agent,
California Department of Justice
Steve Pecor, Probation Officer, Placer
County, Auburn
Steve Reader (Retired), Captain,
Placer County, Auburn
Keith Royal, Sheriff, Nevada County,
Nevada City
Paul Shelgren, Training Sergeant,
Lincoln Police Department
Ann Staddan, Training Manager,
Roseville Police Department
Nick Willick (Retired), Police Chief,
City of Auburn

AGRICULTURE
Bill Dale, Executive Director,
California Beef Council
Cindy Fake, UCCE, Placer County
Laura Goss, Agriculture Teacher, East
Nicolaus High School
Roger Goss, Agriculture Teacher, East
Nicolaus High School
Terry R. Jochim, Rancher, Grass Valley
Dan Kemp, Agriculture Teacher, Bear
River High School, Grass Valley
Deirdre Lefty, Rancher/Farmer,
Lincoln
Dan Macon, Coordinator, High Sierra
RC&D, Auburn
Joann Neft, Agriculture Marketing
Specialist, Placer County
Mike Trueblood, Agriculture Teacher, Lincoln High School
Christine Turner, Agriculture Commissioner, Placer County
Barbara Vineyard, Sierra College Board Member, Rancher, Lincoln

AUTOMOTIVE TECHNOLOGY
Fred Adams, Discount Automatics, Sacramento
Tony Alfano (Retired), Tony’s Auto Care Center, Roseville
Bill Bamber, Del Campo High School
Steve Bechtold (Retired), City of Roseville Vehicle Maintenance Department
Chris Bradford, Auburn Toyota
Bill Cardwell, Car Care Center, Sacramento
Lynn Cardwell, Car Care Center, Sacramento
Art Coppock (Retired), Snap-on Tools, Sacramento
Vic Delius, Service Manager, Gold Rush Chevrolet, Auburn
Dara Dubois, California Department of Education
Bill Foster (Retired), California Highway Patrol
Dennis Gage, Fleet Service Superintendent, Placer County Public Works Dept., Auburn
Joe Gallardo, Owner (Retired), Gallardo’s Auto Shop, Rocklin
Pete Hamel, Reliable Pontiac
Steve Ledbetter, Emeritus Faculty, Sierra College
David Lewis, Chairperson, Dept. of Consumer Affairs, Bureau of Automotive Affairs, Sacramento
Derek Mantel, Derek’s Auto Service, Citrus Heights
Eric Miller, Magnussen’s Dodge Chrysler Jeep Nissan
Michelle Oberg, Pro Bilt Transmission, Cameron Park
Dick Panciera, Service Manager (Retired), Reliable Pontiac and Cadillac, Roseville

John Panelli (Retired), Sierra College Automotive, Colfax
John Pratt, Automotive Instructor, 49er Regional Occupational Program, Auburn
Alan Rowley, Monroe Transmission
Thomas Serpico, Future Nissan
Vince Wisniewski, Snap-on Tools

COMPUTER INFORMATION SYSTEMS
James Agostinho, Student, Sierra College
Larisa Ahmu, Student, Sierra College
Debbie Blagstedt, Career and Retraining Consultant
Jan Caldwell, 49er Regional Occupational Program, Lincoln High School
Ronnie Cobb, Human Resources Manager, Raley’s Corporate Office, West Sacramento
Nancy Dewey, Senior Personnel Analyst, Placer County, Auburn
Lisa Grewohl, Director of Human Resources, Thunder Valley Casino, Lincoln
Petie Mazzoni, North American Operations Director, Oracle, Rocklin
Mark Miller, Director of Business Development, Sutter Health, Roseville
Teri Munger, Public Relations Manager, Hewlett Packard Corporation, Roseville
Karim Rauh, Recruitment, Placer Sierra Bank, Auburn
Kirsten Ryden, Manager, Roseville Science & Technology
Joanne Sweeney, 49er Regional Occupational Program
Barbi Wiggins, Student, Sierra College

COMPUTER INTEGRATED ELECTRONICS (C.I.E.)
Sam Bowman, Cutlass Consulting, Colfax
Stephen Clawson, Engineering Manager, Affymetrix, West Sacramento
Galen Collins, Engineer, AccuRain, Oroville
John Eckart, Customer Service Manager, Diebold, Sacramento
Steven Gillette, Electronics Maintenance Supervisor, City of Roseville
Nathanael Griesert, Design Engineer, NSC Portable Power Systems, Grass Valley
Lee Hayashida, Engineer, Intel Corp., Folsom
Kevin Hill, Chairperson, Intel, Folsom
Roy Ingram, Technician, NEC, Roseville
Don Jennings, Maintenance Manager, Thunder Valley Resort, Lincoln
David Kennedy, Engineer, Michrom Bioresources, Auburn
David Long, Line Maintenance Supervisor, NEC Electronics, Roseville
Dewey Lucero, Engineer, Consolidated Dealer Systems, Inc., Pleasant Grove
Harry Lum, Test Developmen, Engineer Nvision, Grass Valley
Victor Maiello, Engineer, Schilling Robotics, Davis
Tony Martello, Electronics Instructor, Colfax High School, Colfax
Jim Purcell, Needham’s Electronics, Sacramento
Jerry Rein, Engineering Technician, Intermotive Vehicle Controls, Colfax
Mike Robinson, Private Consultant, Grass Valley
David Rosprim, Engineer, Grass Valley Group, Grass Valley
Steve Sanders, Engineer, 2Wire, Inc., Grass Valley
Dave Schorr, Network Administrator, Nvision, Grass Valley
Sue Scott, Technology Specialist, Dry Creek Joint Elementary School District, Roseville
David Snyder, James Cox and Sons, Colfax
Gary Targantos, 49er Regional Occupational Program, Auburn
Carrie Wetter, Recruiting Manager, Union Pacific Railroad, Roseville

CONSTRUCTION TECHNOLOGY
Mike Brown, Contractors State License Board
Joe Bean, Teichert Construction, Sacramento
Tim Ferris, Interior Wood Design, Inc., Auburn
Ed Jenkins, Placer County Building Department
David Martin, General Contractor, Folsom
Stuart Nemy, Owner, Nemy Quality Cabinets, Inc., Rancho Cordova
Marc Pohley, General Contractor, Auburn
Eric Reitzel, Reitzell Engineering, Rocklin
Ron Ridenoire, Homewood Lumber, Loomis
Steven Savage, Savage Millwork, Roseville

DESIGN DRAFTING
Mike Brophy, Mechanical Designer, Harris & Bruno Machine Company, Roseville
Pat Cronin, Project Manager, Miles Treaster & Associates, West Sacramento
Renee Danenburg, Designer, Grass Valley
J.T. Doupnik, Architect, Gary Doupnik Manufacturing, Loomis
Eric Driever, Architect, William Paddon Associates, Roseville
Pam Emrick, Designer, Pasco Scientific, Roseville
Terence J. Green, Architect, William Paddon Associates, Roseville
Philip Hawkins, Architect, PHA & Associates, Auburn
Anatole Hulewsky, Designer, ALH & Associates, Fair Oaks
Stephen M. Jung, Architect, Gordon Rogers & Company, Rocklin
Eric Kim, CAD Designer, Visual Enterprises, Citrus Heights
Molly Korb, CKD, CBD, Kitchen & Bath Designer, MK Designs, Newcastle
Michael Manasco, Designer, Stantec, Sacramento
John Masha, P.E., Civil Engineer, MJM Engineering Consultant, Folsom
Earl McGuire, Engineer, McGuire Engineering, Placerville
Michael Kent Murphy, AIA, Michael Kent Murphy Architect, Auburn
Floyd Riffey, Senior Designer, Aerojet—Tech Systems, Sacramento
Gordon Rogers, Architect, Gordon Rogers & Company, Rocklin
Christine Thompson, Designer, Lionakis Beaumont, Sacramento
Phil Titus, AIA, Rauschenbach
Marvelli Becker Architects, Sacramento
Marni Vincent, Design & Build Assistance, Colfax
Butch Webb, Centex Homes, Roseville

DISABLED STUDENT PROGRAMS & SERVICES
Joseph Albert, Businessman
Chris Atkinson, Pride Industries
Scott Bramlett, Counselor, Disabled Student Services, Sierra College
Beverly Bruce, Occupational Therapist, Vista Child Therapy
John Burton, Part-time Professor, Supportive Education, Sierra College
Molly Cromwell, Special Education Teacher, Placer County Office of Education
Eileen Dickson, Counselor, Sierra College
Dr. Fred Fuerst, Developmental Optometrist
Robert Hancock, Counselor, Disabled Student Services, Sierra College
Dr. William Hardy, Professor, Psychology, Sierra College
Cathy Hodges, Special Education Teacher, Placer County Office of Education
Steve Johns, Department of Rehabilitation
Dr. Richard Koch, School of Education/Rehabilitation, California State University, Sacramento
David Lightfoot, Former Sierra College Student
David Luke, Department of Rehabilitation
Larry Mozes, Assistant Superintendent, Placer County Office of Education
Eric Olesen, Olesen & Associates
Teri Prouty, Learning Disabilities Specialist, Sierra College
Tom Radmilovic, Alta Regional
Valerie Rogstad, Pride Industries
Barbara Royer, Instructional Assistant, Sierra College
Debbie Phipps, Student Services Technician, Sierra College
Loretta Seastrand, Parent
Martine Shelley, Learning Disabilities Specialist, Sierra College
Carolyn Simmons, Student Services Technician, Sierra College
Pam Simmons, Teacher’s Aide, Placer County Office of Education
Susie Smith, Placer County Mental Health
Denise Stone, DSP&S Coordinator, Learning Disabilities Specialist, Sierra College
Linda Kears, Department of Rehabilitation
Andy Keefe, Student, Sierra College-Nevada County Campus
Debbie Kenitzer, Disabled Student Services Technician, Nevada County Campus
Doug Loutzenhiser, FREED
Mike Mann, Alta Regional Center
Vicki MacDonald, Department of Rehabilitation
Rebecca Ortega, Counselor & Student Services Coordinator, Sierra College-Nevada County Campus
Lin Schiffner, EOPS/CalWORKS Counselor, Sierra College-Nevada County Campus
Denise Stone, DSP&S Coordinator, Learning Disabilities Specialist, Sierra College

EARLY CHILDHOOD EDUCATION
Jan Albano, Granite Bay High School
Robin Aly, 49er ROP Careers with Children
Laura Barhydt, Chana High School
Steven Bruce, Sierra College State Preschool, Cirby Elementary, Roseville
Lori Kearney-Capaul, Professor, Human Development & Family, Sierra College
Susana Castillo-Lopez, Placer Community Action Council
Terresa Dawson-Roberts Resource Specialist, Child Development, Placer County Office of Education
Eileen Dickson, Counselor, Sierra College
Susan Fernandes, Tahoe Vista State Preschool
Joy Geck, Sierra College State Preschool, Rocklin Campus
Bonnie Gohara, Sierra College State Preschool, Rock Creek Elementary, Auburn

DISABLED STUDENT SERVICES—NEVADA COUNTY CAMPUS
Neal Allbee, Dean, Sierra College-Nevada County Campus
Ken Bigham, Golden Sierra Job Training Agency
Eric Bleasdale, Student, Sierra College
Riki Colby, Student, Sierra College
Mary Dewitt, Alta Regional Center
Tracy Fenyoe, Neighborhood Center of the Arts
Sara Frounfelder, Alta Sierra Regional Center
Kaylene Hallberg, Dean, Student Services, Sierra College
Katherine Goins, Administrator, Placer County Office of Education, Child Care Services
Jeanette Gragg, Encina High School
Ruth Hall, Sierra Nevada Children’s Services, Truckee
Carolyn Hansen, City of Roseville
Ann Hiner, Part-time Professor, Human Development & Family, Sierra College
Darlene Jackson, Associate Dean, Child Development Centers, Sierra College
Renee Jones-Hawkyard, Mesa Verde High School
Roselene Kelley, Emeritus Professor, Human Development & Family, Sierra College
Gayle Kelley, Placer County Child Care Network
Mary Anne Kreshka, Part-time Professor, Human Development & Family, Sierra College
Terri Maddux, Counselor, Sierra College
Keith Malley, Nevada County Behavioral Health
Kathleen McHugh, SR Coordinator
Cheri Mendoza, Foothill High School
Vickie Morgan, Family Child Care Association
Catherine Morris, Counselor, Sierra College
Francine Nunes, Child Care Coordinating Council of Placer County
Pat Peck, Folsom High School
Susie Piette, Little Orchard Preschool, Rocklin
Michael Rahilly, Early Childhood Relationship Support Project
Barbara Robertson, Truckee High School, Part-time Professor, Human Development & Family, Sierra College-Truckee Center
Gail Salata, Elementary Teacher, Rocklin & Part-time Professor, Sierra College
Lin Schiffner, EOPS Counselor, Sierra College-Nevada County Campus
Ann Shoemaker, Roseville High School
Josie Shrieve, Family Child Care Provider
Regina Swaney, Instructor, 49er ROP Careers With Children
Gwen Turner, 2+2 Articulation Consultant, Sierra College
Karen Van Epps, Tahoe-Truckee Unified School District
Diane West, Sierra College Child Development Center-Nevada County Campus
Marcia Westbrooke, Child Care Coordinating Council

ENVIRONMENTAL HORTICULTURE
Marcia Braga, Professor, Environmental Horticulture, Sierra College
Emil Baldoni, Weiss Baldoni Nurseries, Grass Valley
Judy Barton, Student, Sierra College
Peter Bowman, Landcare, Sacramento
Tim Crowley, Water Management Coordinator, Public Works Department, Folsom
Steve Fackler, Golf Course Superintendent, The Ridge Golf Course, Auburn
Cindy Fake, Horticulture and Small Farm Advisor, UC Cooperative Extension Service, Auburn
Debbie Flower, Part-time Professor, Environmental Horticulture, Sierra College, California Nurseryman’s Association
John Inglett, California Landscape Contractors Association, Western Tree Nursery, Orangevale
Robert Littlepage, Littlepage & Associates, Applegate
Pat Morgan, Interior Services, Valley Crest Inc., Sacramento
John Nita, Nurseryman, High Ranch Nursery, Loomis
Dave Patterson, Target Specialty Products, Lincoln
Christine E. Turner, Agricultural Commissioner, Placer County Agriculture Department, Auburn
Tony Young, Teichert Aggregates, Sacramento

EXTENDED OPPORTUNITY PROGRAMS AND SERVICES & COOPERATIVE AGENCIES RESOURCES FOR EDUCATION—EOPS/CARE
Titus Bigoose, Tribal Enterprises Foundation
Vivian Dancingstar, Tribal Enterprises Foundation
James Furbee, Professor, English, Sierra College
Mark Kwoka, Counselor, Sierra College
Susie Le, Counselor, Sierra College
Linda Marcarian, Counselor, Rocklin Unified School District, Alternative Education Programs
Cindy Mariano, Counselor, Sierra College
Janice Paul, Nevada County, Golden Sierra Job Training Agency
Marcos Sanchez, Director of College Assistance Migrant Education Program (CAMP), California State University, Sacramento
Gale Swafford, Placer County, CalWORKS/GATEWAY/TAPP
Craig Yamamoto, Financial Services Manager, Sierra College

FASHION DESIGN AND MERCHANDISING
Joseph Green, Regional Manager, bebe
Diana Higashi, Part-time Professor, Fashion Design and Merchandising, Sierra College
Julie Hiroti, Fabric Artist
Michael Sommerfield, Owner, Miosa Couture

FIRE SCIENCE TECHNOLOGY
Tom Browning, Battalion Chief, Grass Valley Fire Department
Tony Clarabut, Chief-NYP, California Dept. of Forestry, Auburn
Mark D’Ambrogi, Chief, Auburn City Fire Department
Ed Horton, Loomis
Jim Marchio, Grass Valley
Tim Mrozinski, Rocklin
Jeanne Pincha-Tully, U.S. Forest Service
Peter Poe, Battalion Chief, North Tahoe Fire, Tahoe City
David Ray, Battalion Chief, Nevada County Consolidate
Mark Romer, Division Chief, Roseville Fire Department
Barton Ruud, Counselor, Sierra College

HONORS
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Julie Bruno, Professor, Communication Studies, Sierra College
Dr. Dominic Calabrese, Professor, Physics, Sierra College
Carol Eisenhower, Professor, English, Sierra College
Tim Haeney, Professor, Campus Life Coordinator, Sierra College
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Dr. Karen Walters Dunlap, Dean, Sciences & Mathematics, Sierra College
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C. Brownlee, Education Department, Auburn Faith Hospital, Auburn
Kay Courter, Education Coordinator, Marshall Hospital, Placerville
Nancy Dekker, Educational Services, Sierra Nevada Memorial Hospital, Grass Valley
Sue Ann DiGiusto, Kaiser Hospital, Roseville
Gail Fisher, Sutter-Roseville Medical Center
Dee Ford, R.N., Sutter-Auburn Faith Hospital, Auburn
Mary Gish, R.N., M.S.N., Sierra Nevada Memorial Hospital, Grass Valley
Kathy Green, R.N., University of California, Davis
Kay Jelten, R.N., Sutter General Hospital
Judy Lange, Assistant Administrator, Vencor Hospital, Sacramento
Pam Lippert, Director Patient Care Services, CPC Heritage Oaks Hospital, Sacramento
Kathy Morris, R.N., Administrator, Golden Empire Convalescent Hospital
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Mary Ruvalcaba, Mission Oaks, Carmichael

NUTRITION AND FOOD SCIENCE
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Clare Dendinger, Professor, Nutrition and Food Science, Sierra College
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Pete Enochs, Owner, Latitudes Restaurant, Auburn
Laurie Kamigawachi, Outpatient Dietician Education Services, Woodland
Dr. Mithia Mukutmoni, Professor, Nutrition and Food Science, Sierra College
Karen Sherlin, Department of Health Services, WIC Branch, Sacramento
Chanie Sutherland, 24-hour Fitness, Roseville

SMALL BUSINESS DEVELOPMENT CENTER
David Castaneda, SBA, Sacramento
Kim Neri, SACTO

Bobbi Park, Director, Placer County Office of Economic Development, Auburn
Janice Rhodd, CSU Chico, Research Foundation/Center for Economic Development
Betty Riley, Sierra Economic Development District, Auburn

SUPPORTIVE EDUCATION
Chris Atkinson, Pride, Roseville
Scott Bramlett, Counselor, Sierra College
John Burton, Part-time Professor, Sierra College
Molly Cromwell, Instructor, Secret Ravine School, Newcastle
Bob Hancock, Counselor, Sierra College
Beverly Hill, Special Education Advocate, Auburn
Cathy Hodges, Instructor, Secret Ravine School, Newcastle
Anita Jumper, Special Education Advocate, Loomis
Susan McClelland, Part-time Professor, Sierra College
Tom Radmilovic, Alta Regional, Auburn
Valerie Rogstad, PRIDE, Roseville
Loretta Seastrand, Parent
Denise Stone, DSP&S Coordinator, Learning Disabilities Specialist, Sierra College
Directions to Nevada County Campus

Coming from Auburn on Hwy. 49: Take Brunswick Rd. exit (located between Grass valley and Nevada City). Turn left onto Brunswick Rd. and proceed to second stop light at Nevada City Hwy. Turn left onto East Main and proceed to next stop light at Sierra College Drive. Turn right onto Sierra College Drive to the roundabout entrance to the college.
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